User Manual

Sonic Studio, LLC
www.sonicstudio.com

Sonic Studio

Table of Contents

About This Manual

This manual, as well as the software described in it, is furnished under license and may only be used or copied in accordance with the terms of such license. The information in this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Sonic Studio, LLC. Sonic Studio, LLC assumes no responsibility or liability for any errors or inaccuracies that may appear in this book.

Except as permitted by such license, no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of Sonic Studio, LLC.

Notice of Liability

The author and publisher have made every effort to ensure the accuracy of the information herein. However, the information contained in this document is provided without warranty, either express or implied. Neither the authors, Sonic Studio, LLC, nor its dealers or distributors will be held liable for any damages to be caused either directly or indirectly by the instructions contained in this book, or by the software or hardware products described herein.

SONIC STUDIO, LLC MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE APPLE SOFTWARE. SONIC STUDIO, LLC DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE SONIC STUDIO, LLC SOFTWARE IN TERMS OF ITS CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS, OR OTHERWISE. THE ENTIRE RISK AS TO THE RESULTS AND PERFORMANCE OF THE SONIC STUDIO SOFTWARE IS ASSUMED BY YOU. THE EXCLUSION OF IMPLIED WARRANTIES IS NOT PERMITTED BY SOME STATES. THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

IN NO EVENT WILL SONIC STUDIO, LLC, ITS DIRECTORS, OFFICERS, EMPLOYEES, OR AGENTS BE LIABLE TO YOU FOR ANY CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES (INCLUDING DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, AND THE LIKE) ARISING OUT OF THE USE OR INABILITY TO USE THE SONIC STUDIO SOFTWARE EVEN IF SONIC STUDIO HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Notice of Rights

Chapter 1.....Introduction

PreMaster CD is an easy to operate, task-specific tool for premastering on your desktop. PreMaster CD is ideal for:

- Reference auditioning the audio prior to sequencing & restoration
- Restoring problem sections within your program material
- Sequencing your material and refining audible transitions
- Defining PQ metadata for your replication master
- Creating a reliable replication master for your title

PreMaster CD allows you to audition, repair, edit and mark up your finished mixes without the need to tie up an expensive, DAW-based production system. Since premastering is predicated on the generation of metadata for the finished CD, PQ marks can be added, deleted or moved in time, while ISR codes and UPC/EAN entries can be easily defined and edited. Also, since PreMaster CD runs on any Apple Macintosh with 10.4.3 or newer, including laptops, it is highly portable so you can take it with you, whenever and wherever needed.

Chapter 2..... Quick Start

2.1 Before You Begin

2.1.1 Requirements

At a minimum, PreMaster CD requires the following:

- Apple Macintosh G4 1 GHz minimum,
  Intel Mac or G5 1 GHz or faster preferred
- 1024 x 768 pixel or larger display
- 1 GB RAM minimum, 2 GB or more preferred
- OS 10.4.3 or newer, OS 10.5.1 or newer
- spare USB port for iLok Smart Key
- optional Series 300 DSP I/O Processor or FireWire Core Audio interface

For delivery of the final DPP files for replication, a data storage device, such as a DVD-R or data tape drive, is required as well. Since PreMaster CD uses OS X's Core Audio, the quality of audio playback will be entirely dependent on the hardware and driver(s) used.

Note that, though PreMaster CD is not tested with prior versions of Macintosh hardware, operation with older hardware should be usable as long as the CPU supports the required OS version. Slower hardware, especially older hard disks, may have difficulties "keeping up" with the application, however, resulting in drop–outs during playback and possible interruption or artifacts during deliveries.

2.1.2 Installation

To install PreMaster CD, please refer to the PDF copy of the Install Guide provided with your copy. Once you have PreMaster CD installed you should set the System Preferences > CDs & DVDs > When you insert a blank CD: to Ignore. That way, the operating system does not "take control" of a blank CD inserted into any drives.

2.2 Creating CDs With PreMaster CD

PreMaster CD makes it easy to quickly create professional quality, Red Book–formatted CD-Rs. In four steps, you can make an audio CD. Here is an overview:

First: Assemble your audio

Start by creating a new Project and adding audio files to the Project. When you command–drag an audio file into the Project, it is imported as a segment and automatically added as a CD track.

You can arrange and edit your audio in the Waveform View. A track is created for each new segment, and you can edit the track order with the Track Bar or the list in the Mark Info window.

Second: Edit and process segments and tracks

You can edit segments and tracks in a variety of ways, working either graphically in the Waveform View with the Track Bar, or numerically in the Text View and Mark Info window. You can copy, reorder, trim, split, adjust gain, invert polarity and normalize segments. It's also possible to combine several segments into one track, or create several tracks with only one segment. As you work, you can play all, or any part of, the Project to immediately hear the result of your work.

Third: Adjust crossfades

When you add a segment, PreMaster CD creates a CD track and adds track marks to define the pause between tracks. You can create crossfades between overlapping segments, and adjust the crossfades in the Waveform View. You can also insert Index Marks to create subdivisions within a track.

Fourth: Burn the Project to a CD

When you burn your Project, PreMaster CD uses supported CD burning hardware that is connected to, or installed in, your Macintosh. The following section walks you through the creation of a simple CD in six easy steps, using individual audio files and default settings for pauses and crossfades.

2.3 Step By Step — Make A Quick CD

This section covers four basic steps to create a CD:

Step 1. Open

Open PreMaster CD and choose File > New to create a new Project.

Step 2. Drag

Collect the desired audio files, drag them and, holding down the command key, drop the files onto the top Panel in the order that you want them to appear on the CD. The command key is only needed just before you drop the files. PreMaster CD will automatically create CD Tracks, displayed in the Track Bar, from your audio files.

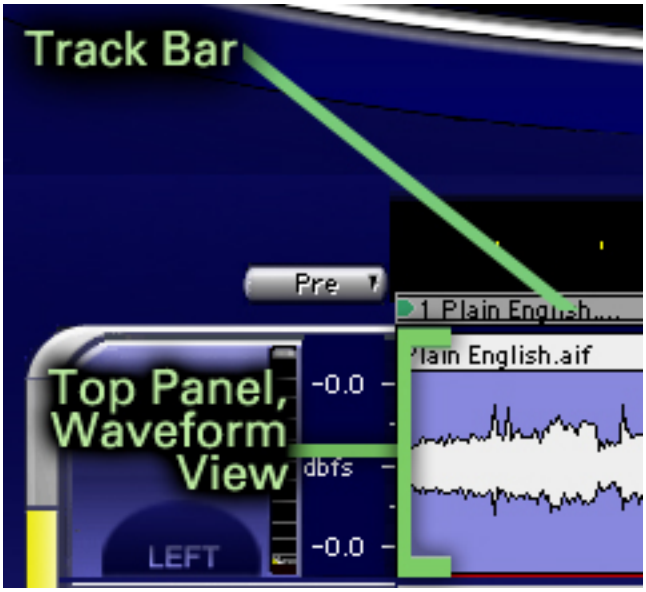

Figure 2.1: A Project showing the Track Bar and top Panel

Step 3. Check

Choose Window > Mark Info and select the PQ Delivery tab. If there is no blank disc in your CD burner's tray, the STATUS field prompts you to "Insert media for delivery."

Step 4. Burn

Insert a blank CD-R disc, if you have not already done so. The STATUS field will tell you, "Media ready for delivery." If you have an external, FireWire burner you'd like to use, click on the white triangle to the right of the "Device" label to switch to your external burner.

Click the Execute button in the Mark Info window to start the burn process. PreMaster CD will ask you to "Specify Folder for DDP Image. CD will be replicated from DDP image." Using the Finder browser, specify a New or existing folder and click the OK button. PreMaster CD begins delivering your Project to the blank CD. The STATUS field shows the progress of the burn process. When the burn process is complete, the CD is ejected from the CD burner, ready to play.

Chapter 3..... Basic Operation

3.1 General Workflow & Explanation of Terms Used

In order to prepare your finished master, PreMaster CD offers fast, simple audio editing along with creation and modification of metadata. Though PreMaster CD is designed to primarily create finished stereo programs, it also includes CD-R and DDP file creation as well. DDP or, Disc Description Protocol, is the professional's preferred method of delivery of production masters for optical disc replication.

When opening a sound file into PreMaster CD, you are creating a copy of the file in memory that you can manipulate. This copy is placed into a 'Project,' the workspace created by PreMaster CD. Within the Project, you can add sound, create and edit marks that will generate PQ codes, and place SRPs, persistant editing–related placeholders inside the Project. All this information can be saved and later recalled.

Raw sound files can be imported from various file formats, including AIFF, WAV, BWF and SD2 or Sound Designer II with regions. These files are then edited, allowing you to compile a new program from various sources.

When you are satisfied that your Project is acceptable, you can create a Compact Disc that allows you to check the completed deliverable. These "check discs" or "refs" are perfect for approvals but not for replication. The audio data on these CD-Rs, technically CD-DA–formatted Orange Book discs, contain error–protected metadata but not error–protected audio data. So, errors can propagate through premastering to replication, resulting in costly rework. For disc replication, you should save your changes to the Project and "deliver" a DDP file set, a reliable, error–protected file format specifically designed for interchange between facilities and optical disc replication.

3.2 Project Layout

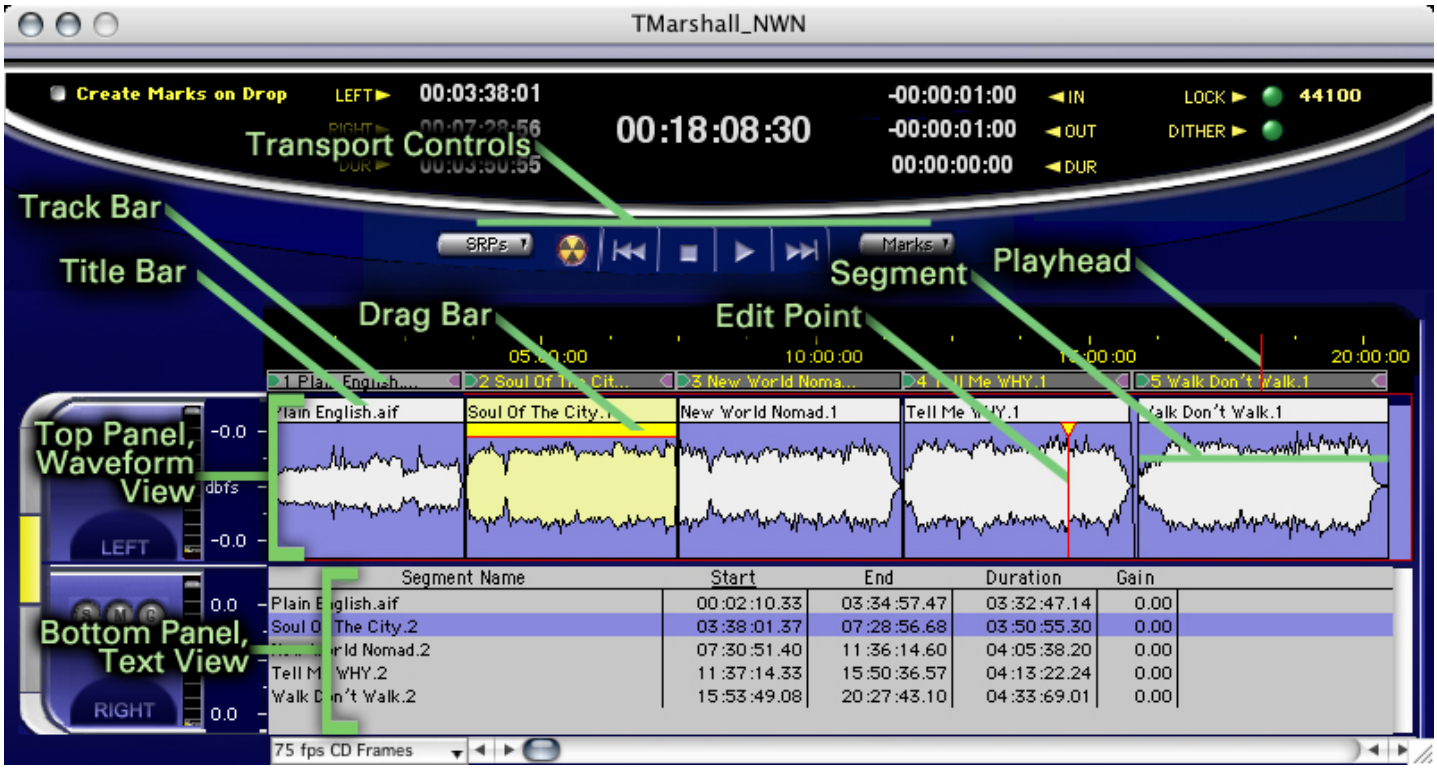

Figure 3.1: Main components of a Project window

In PreMaster CD, all tasks are performed in or via a Project. The bottom half of a new Project shows two empty Panels, containers for stereo sound files and their accompanying waveform displays or text lists. The upper Panel shows the left channel while the lower Panel represents the right channel. A scroll bar appears at the bottom of the Project, directly beneath the lower Panel, allowing you to scroll across the time line. To the left of this scroll bar, a drop down menu is available, where the time standard can be selected. The function of this time standard control is discussed further in section 3.7.1 but it's best to leave it at the default setting of 75 fps as this is the correct settings for time code on Compact Discs.

To the left of each Panel are solo and mute buttons, labeled with an S and M respectively, along with an amplitude meter. Also, a gain overlay button, labeled G, is available to the right of S and M buttons. The function of this button and the application feature it brings up will be discussed later in section 4.4.

Immediately above the waveforms, is a black banner with time code values in yellow. At the top of the black area is the time line for the waveforms. The bottom of the black area is reserved for "PQ Marks" and the Track Bar, discussed in section 3.9. The data underlying the whole of the two Panels, with marks and all data describing the audio program, is also referred to as the 'EDL' or Edit Decision List, and is saved as a separate file within each Project's folder.

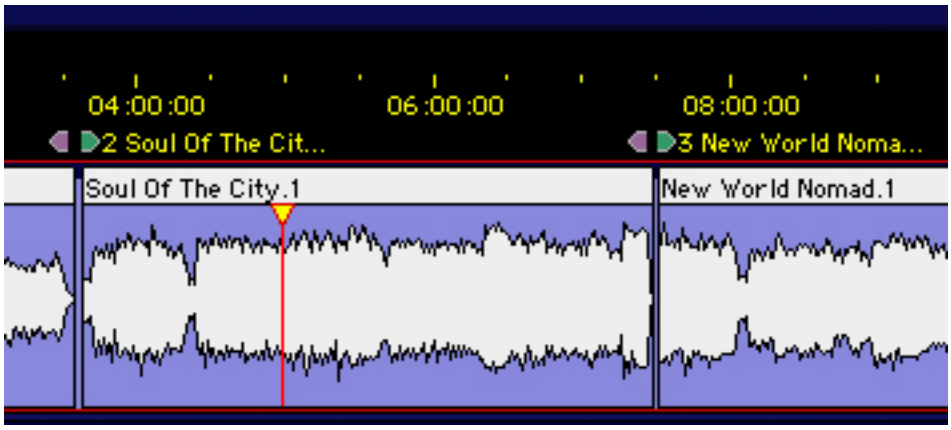

Figure 3.2: Waveform display with marks above the Panels

Above the time line and marks are the transport controls. They offer dedicated buttons for play, stop, fast forward and rewind. Also along this bar are the SRP, Burn and Marks buttons. The function of these are explained in sections 4.7, 4.10.4.7 and 3.9.6 respectively.

Figure 3.3: A Project's Transport Controls

Finally, at the top of the main window are time displays on the left, for the Playhead, and, on the right, for edit locations. In the middle is a display showing the current location of the Playhead and other time information related to that Project.

In the upper right hand corner of the Project window are the LOCK and DITHER indicators, the latter being discussed in detail in section 6.9.7.3. The LOCK indicator is green when PreMaster CD's audio engine is locked to a valid clock reference. The DITHER indicator is green when re-dithering on output is enabled. In both instances, green is good!

3.3 Starting a Project: Opening Files

3.3.1 Opening Projects

To create a new Project, select File > New Project... from the menu bar. A blank, default Project opens.

You can open an existing Project by selecting File > Open Project... from the menu bar. This brings up a standard Mac OS browser dialog for finding and selecting the desired Project file. Confirm your selection with Choose and the Project opens into a new Project window.

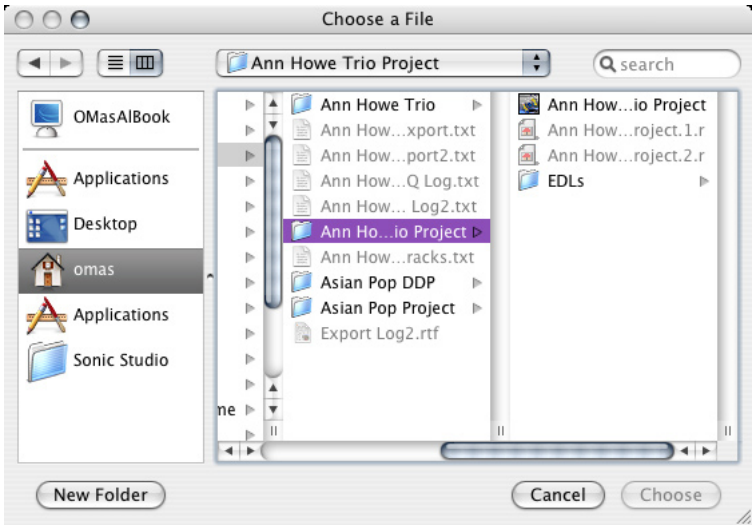

Figure 3.4: Mac OS browser dialog for opening a Project

After highlighting your selection and clicking Choose, the Project will be opened, together with any available editing and PQ metadata already saved in the Project folder.

A third way to open an existing Project is by using the Finder. Simply drag the file from any folder onto the PreMaster CD application icon or, if the application is running, the application's Dock icon. In the Finder, you can also double click on a Project's file icon.

3.3.2 Opening Sound Files

Once your Project is open, you need to open your sound files into the Project. As with Projects, using either the File menu or dragging and dropping will work. By holding down the command key when dropping in sound files, PreMaster CD will autospace the new segment, as well as auto–generate PQ metadata. Section 3.9.4 discusses the auto–generated PQ metadata while section 4.2.1 below discusses autospacing functions in detail.

By selecting File > Open Sound File... from the menu bar, you will bring up a standard Mac OS browser dialog for finding and selecting the desired audio file. PreMaster CD will open AIFF, WAV, BWF and SD2 files with regions. Confirm your selection with Choose and the sound file opens into your Project.

3.3.3 Adding Your First Sound File

In addition to the Open Sound File… command, you may also drag and drop sound files into a Project. When dragging in split stereo sound files, always drag only the left channel onto the top Panel. PreMaster CD will parse the file and open the right channel for you into the bottom Panel.

PreMaster CD makes the job of CD assembly easy by providing a special behavior for adding your sound files to a Project. If you drag your first sound file into the top Panel of an empty Project, PreMaster CD will automatically place it on the time line at 00:00:02:00 or 2 seconds.

An exception to the default drag and drop behavior, PreMaster CD normally uses the time code location of your cursor to determine the address of the “head” or start of the resultant sound file, as well as the selection status of already placed sound files.

By holding down the command key before dropping sound files, PreMaster CD will also automatically create PQ metadata for all the files. We recommend you get in the habit of holding down the command key when dropping sound files as it make performing basic pre–mastering chores and resequencing much easier.

Note that command–dropping only applies to drag and drop, not to the Open Sound File… command. Later in this chapter, section 3.9 discusses PQ metadata in more detail.

3.4 Waveforms

A waveform display provides visual reinforcement of audible cues when editing. Normally, the audio file types that PreMaster CD opens contain metadata such as sample rate and related information, but no information on visualization. Waveform shape information thereforee has to be generated by PreMaster CD itself. The application generates individual “waveform files,” one for each channel, in order to display high resolution waveforms in the Panels at any zoom level. The generation of wavform files is performed in the background so normal operation is not interrupted.

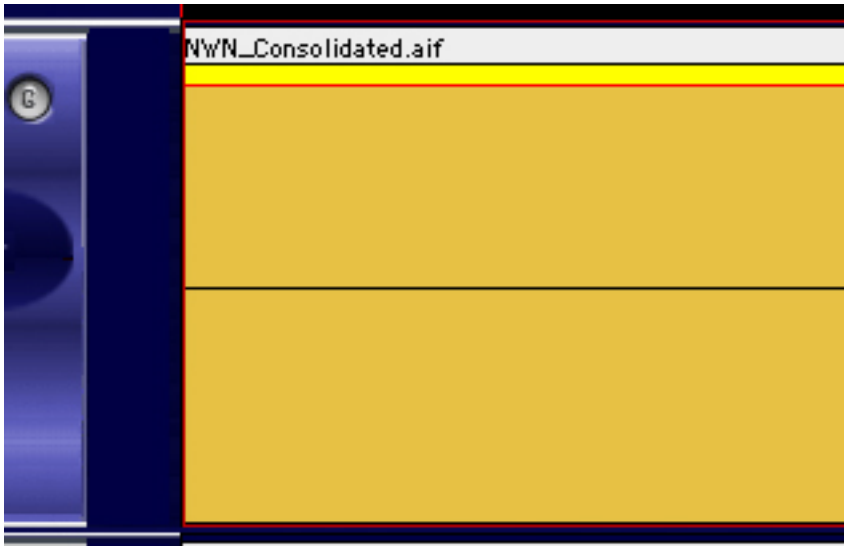

Figure 3.6: Display of a sound file without waveform metadata

If waveform files are absent from one or more audio files included in the Project, PreMaster CD will automatically start generating those files in the background. Waveform files, identified by their “.r” extension, are placed in the same folder as the audio files and can be read by any other Sonic Studio product.

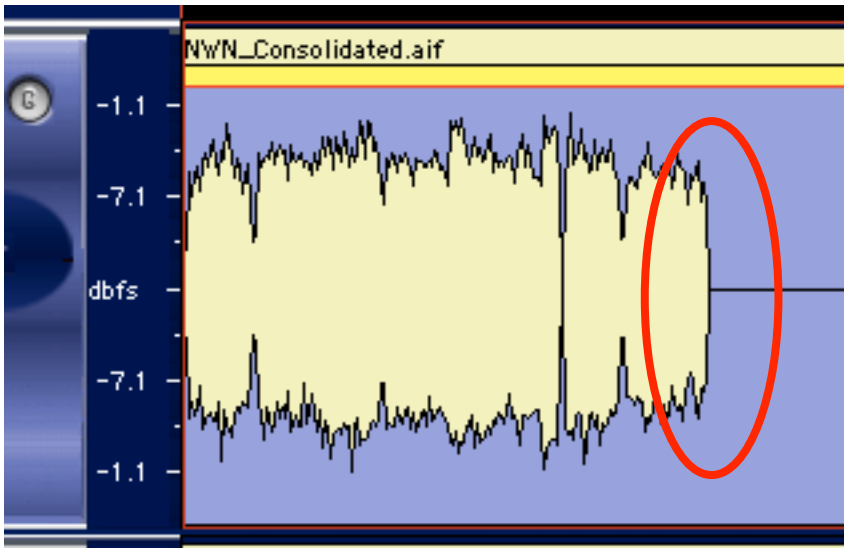

Figure 3.7: The building of waveform metadata in progress

Once the waveforms are visible, the arrow keys control the viewing window and a quick tap of the E key always zooms out to view the entire Project. In section 3.6 below, navigating your Project is discussed in more detail.

3.5 Auditioning Sound

3.5.1 Playback

When you press the keyboard's Space Bar, the cursor changes to a "speaker & note" and playback begins. A thin vertical red line, the Playhead, spans the Panels and time line and moves horizontally to indicate the location of playback.

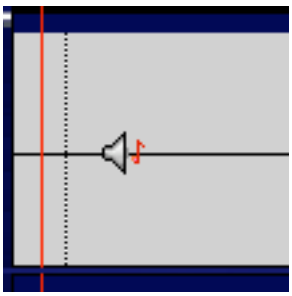

Figure 3.8: The cursor changes into a speaker & note shape during playback

When you first open a sound file and begin listening, playback, once started, will begin at the left edge of the audio. The Playhead will move to the right, across the file. When you hit the Space Bar again, playback ends and the Playhead halts its motion. When you hit the space bar a third time, the Playhead will jump back to the left side of the waveform display, the beginning of the sound file, and playback will begin again.

3.5.2 Playback from the Edit Point

When you click anywhere inside the waveform display, the entire Panel, or rectangle containing the waveform display, is selected. The selected Panel has a medium blue background and hairline red border. Once selected, a click anywhere in that Panel produces a thin vertical red line, with an inverted yellow triangle on top. This is the "Edit Point."

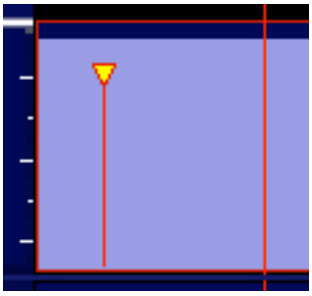

Figure 3.9: Empty Panels with Edit Point at left and Playhead at right

When the Edit Point is present, playback will always start from the Edit Point. When you stop playback and start again, the Playhead will jump-to the Edit Point and start playback from there.

You can move the Edit Point by clicking on a new location in the waveform display. The Edit Point will jump to the click location. Alternatively, you can click and drag the Edit Point's yellow triangle to move it to a new location.

3.5.3 Playback from Playhead

The Playhead itself can also be manipulated directly. By double clicking in the black time line banner, the Playhead is moved to the click location and playback begins. You can also edit the large, central time code address in the time display at the top of a Project, which will move the Playhead to the specified address. Section 3.5.5 below discusses the time display.

The Transport Controls above the top Panel provide tape transport emulation, so you can play, stop and continue playing from the current location. You can also select the Play > From Playhead command.

3.5.4 Random Play

If you hold down the option key and move your cursor to any location in the waveform, you can click–hold the mouse button. The Playhead will move to your click location, playback will begin and continue as long as the mouse button is held down.

3.5.5 Time Displays

The large, central time code display in the center top of the Project window is live and editable, as are the LEFT, RIGHT, IN, OUT and DUR fields where applicable. As mentioned above, you can click on any subdivision or click–drag on the entire central time code display to select and modify the current address of the Playhead.

For all editable time code addresses, a single click in any HH:MM:SS:FF subdivision will highlight that subdivision, allowing you to type in a value. By click–holding and dragging up or down, the cursor will change to an arrow and the numeric value displayed will increase or decrease respectively. Click–hold for more than two seconds, and the rate of change increases. The arrow keys also let you move to a particular subdivision and increment or decrement the current value. Option–dragging a time code address allows you to quickly "clone" that value into another editable field.

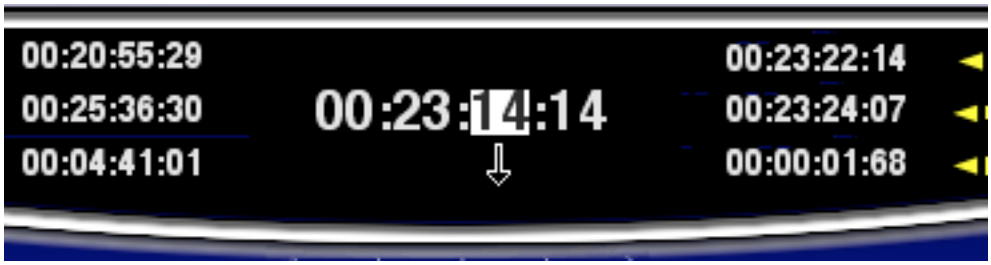

Figure 3.10: Click–dragging down to edit a time code address

All modifiable time code fields in PreMaster CD support cut, copy and paste. Double clicking on any time field will select the entire field, allowing you to enter a complete time code address.

3.6 Navigating the Waveform Display

There are many tools for quickly moving around inside of the waveform display. This section covers scrolling and zooming, in general and on selections.

3.6.1 Scrolling

If you are zoomed all the way out, the entire waveform will be displayed. If you are not zoomed out entirely, some of the waveform will be invisible, off the edges of the Panel. You can move the window view left or right by moving the scroll bar at the bottom of the waveform display. You can also move the window view left and right by using the Left and Right Arrow key respectively.

Finally, you can drag the view left or right by simultaneously holding the control, option and command keys. When you click–hold, the cursor changes to a hand to indicate you are in Move View mode.

3.6.2 Zooming

You can zoom in using the Down Arrow key, and zoom out using the Up Arrow key. To zoom all the way out, hit the E key, to see your "entire" program.

3.6.2.1 Zoom around Edit Point

As you zoom in and out, it is likely that you will want to keep the Edit Point in view. To do this, hold down the Apple or command key as you use the Up Arrow or Down arrow keys. This will keep the Edit Point centered in the middle of the display.

3.6.2.2 Zoom to Selection

Clicking and dragging on the waveform itself selects a region, highlighted in yellow–orange. Typing command-G or selecting View > Zoom to Selection... will zoom around that selected region. See section 3.7 for more information on region selection.

You can also zoom to a selection while making the selection. By holding down the command and option keys while click–dragging on the waveform will define a selection and zoom to that selection as well.

3.6.2.3 Zoom Around Time Selection

If you click and drag in the black time line banner above the top Panel while holding down the Apple or command key, the Panel will zoom to display the region of the time line that your click–drag defined.

3.7 Selections

Selections let you highlight a portion of the audio where you want to perform a desired operation.

3.7.1 Selecting a Region

To select a region, click–drag on the waveform display. At the point that you want the selection to start, click and hold down the mouse button, then drag to complete your selection. An area will be highlighted in yellow–orange, indicating the selected region.

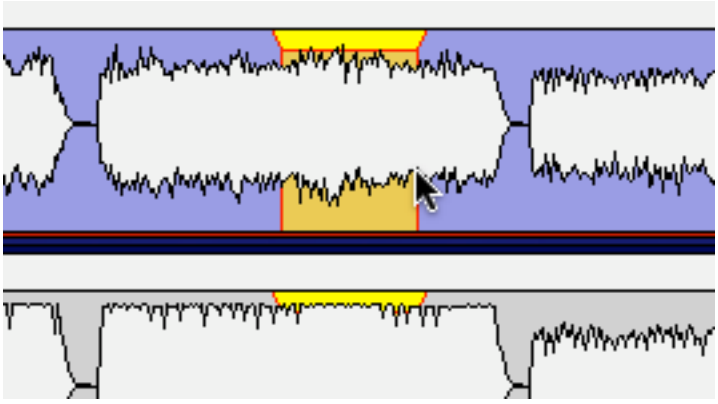

Figure 3.9: A region selected, indicated by the yellow highlight

You can click–drag either left or right to define a selection. In addition, you can fine tune the boundaries of a selected region. Hold down the shift key and click on either side of the selected region then, while continuing to hold the shift key, drag left or right to expand or contract the selection.

While selecting regions, the LEFT, RIGHT and DUR fields at the top of the Project are active and editable. See section 3.5.5 above for more information on manipulating time code addresses.

Note that the format in which all time fields are represented in PreMaster CD is user selectable. By clicking in the time standard display to the left of the time line scroll bar, a drop down menu offering four choices becomes available.

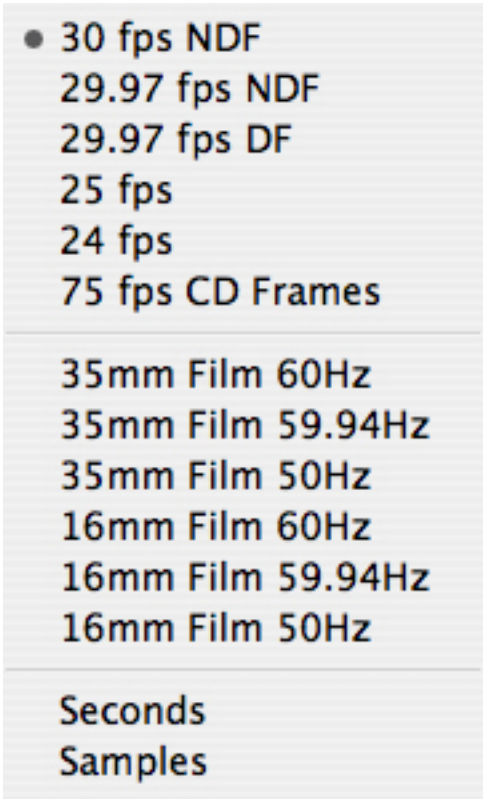

Figure 3.10: The time standard menu

Figure 3.10 above shows the time standard choices. 30 fps NDF is the default setting and signifies non–drop frame time code, the default time code format typically used by DAWs to prepare material for CD release when compact disc preparation was video tape–based. 29.97 drop and non–drop are "pull down" rates for NTSC video while 25 fps is for PAL video. The 24 fps setting is for general motion picture work while 75 fps CD Frames is the internal time code format for CD-DA discs (audio CDs). When mastering for CD release, 75 fps is the best choice, providing higher resolution and complete compatibility.

The 35 and 16 mm setting provide minutes and seconds at non-pull down and pull down (59.9 Hz) rates referenced to 60 Hz for North America and Japan. Also included are versions with a 50 Hz reference for Europe.

The Seconds setting shows all times in multiples and fractions of seconds. Finally, Samples displays all times in absolute samples based on the selected sample rate .These same selections appear in the Windows > Preference >Time Display tab, where the Project default is set. See section 4.9 for more information on time standard settings.

Note that, because PreMaster CD is designed, among other functions, to create the metadata necessary for Compact Disc replication, all of your PQ marking decisions are directly tied to the 75 frame standard. If you are using PreMaster CD for CD preparation, you should always use the 75 fps CD Frames standard.

Note also that, when a region is selected and playback is invoked, the Playhead relocates and playback starts at the beginning of the selection.

3.7.2 Selecting Segments

An entire sound file "segment," the representation of contiguous samples from a single sound file, can be chosen as a selection. Click on the white Title Bar at the top of any segment, which displays the source sound file name.

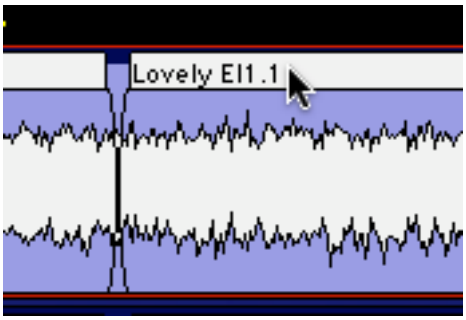

Figure 3.11: The Title Bar

The waveform highlights yellow-orange and a bright yellow bar appears below it, running the entire length of the segment, to indicate that the segment has been selected.

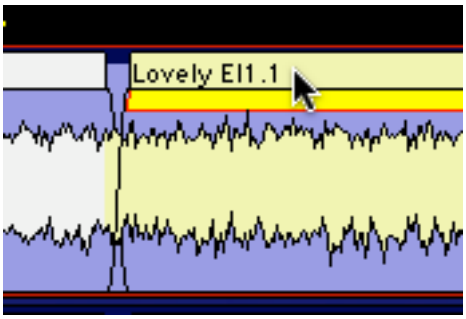

Figure 3.12: A selected segment, indicated by the yellow highlight

By holding down the shift key and simultaneously clicking in other segment's Title Bars, a selection of contiguous segments can be made. Also, while holding down the Apple or com-

mand key and clicking any Title Bars, a group of non–contiguous or random segments can be selected simultaneously.

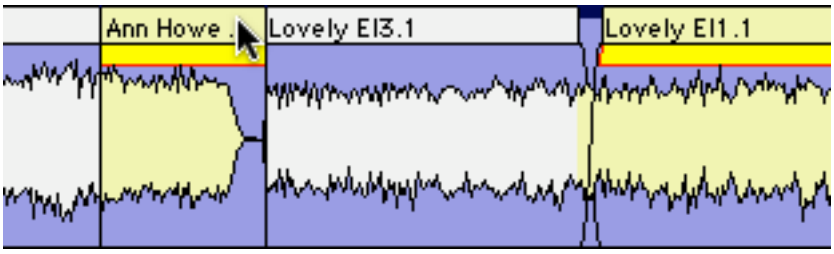

Figure 3.13: Multiple selected segments

If you have an existing selected segment, several additional segment selection choices are available. By tapping the left or right arrow key, you can select prior or latter segments, respectively. By holding down the shift key, you can tap the left or right arrow key to contiguous select prior or latter segments, respectively.

Note that, when one or more segments are selected and playback is started, the Playhead moves to the head of the first selected segment and playback commences from there..

3.8 Simple Editing

There will be occasions where raw sound files need modifications. PreMaster CD offers advanced editing features, as well as simple tools to change amplitude and transitions.

3.8.1 The Fade Tool

The head (start) or tail (end) of segments are represented in the display by a thin black vertical line. When zooming in, this line will reveal itself to be a curve representing a 'fade' or amplitude versus time "envelope." Each segment starts with an Fade In and ends with an Fade Out. Fade Ins and Outs are both "Black Fades" where "black" refers to "Edited Black," the absence of audio data in the Panel.

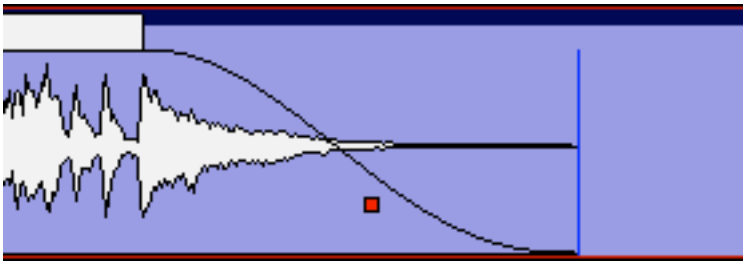

Figure 3.16: End of a segment with Fade Out glyph

Fades have a specific starting location and duration. Both parameters can be easily adjusted with the "Fade Tool."

First, the duration or length of the fade can be changed. To do so, zoom in so you can see what you're doing and have reasonable control of the fade. Then, click–hold and drag on the upper "inside" edge of the fade to the desired location.

Note that, with the cursor on the upper inside edge, the cursor changes into a cross with left, right and up arrows indicating you can change the duration.

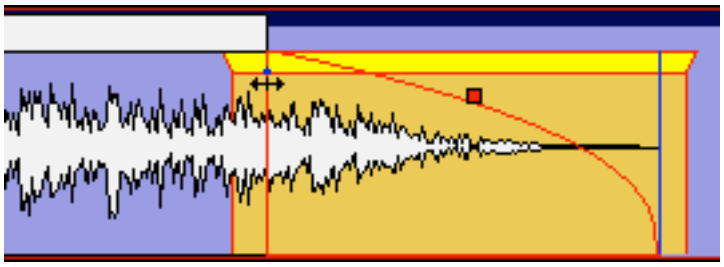

Figure 3.17: Fade tool symbol while moving top inside edge of the Fade

Of course, the length of a fade can also be changed by moving the lower or "outside" edge of a fade, leaving the inside edge in place. To do so, move the cursor over the fade near the bottom of the display until the cursor changes into the Fade Tool again. This time, the cursor changes into a cross with left, right and down arrows.

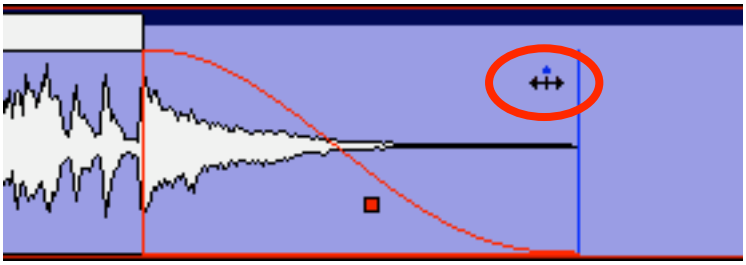

Figure 3.18: Fade tool symbol indicating you are changing the outside edge of the fade

Click–hold and drag the bottom end of the fade to the desired position. Release the button to confirm the change. Remember that modifying the outside edge is only possible within the limits of the actual samples of audio data represented by the segment.

If the cursor is moved over the middle portion of a fade, the Fade Tool cursor also appears but this time as a horizontal arrow with a vertical center line. In this trim mode, you are able to move the entire fade left or right, changing its location without changing its duration. This allows you to "hide" or "reveal" portions of the underlying segment, by shortening or lengthening the segment duration, trimming the segment as you go. Click–hold on the fade and drag the fade left or right. Releasing the mouse button fixes the fade in that location. While you are moving or changing a fade with the Fade Tool, the waveform is "live," continuously changing visually to reflect the modifications you are making.

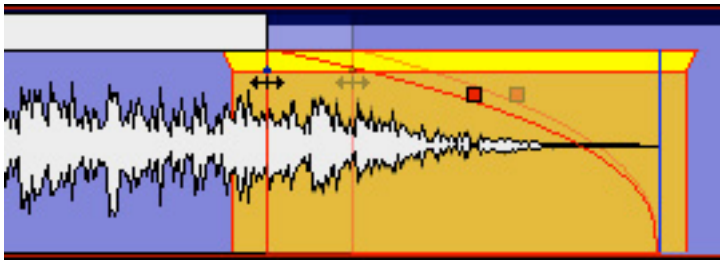

Figure 3.19: Dragging the inside edge to lengthen a Fade

Note that the maximum duration of a fade is equal to the underlying sound file duration. As mentioned above, it is not possible to move a fade past the actual start or end of an underlying sound file.

Also, moving Black Fades so more than two overlap is not allowed as well. A modal "Check-ForTripleOverlap" dialog will pop up, telling you that your command would result in three Black Fades lying on top of each other.

3.8.2 Deleting Part of a Sound File

It may be necessary to edit out some part of a sound file. PreMaster CD allows you to do so quickly and with great precision. To easily cut out a portion of a sound file, simply select the region that you want to remove. Then, select Edit > Delete Selection or hit the delete key to remove the selected region and "slip" all downstream segments left to close the gap. More on this later...

More precise editing can be performed with In points and Out edit points, special marks you can place in the Panel. An In Point is shown as a vertical line with a triangle at the bottom, pointing right, while an Out Point has the triangle pointing left.

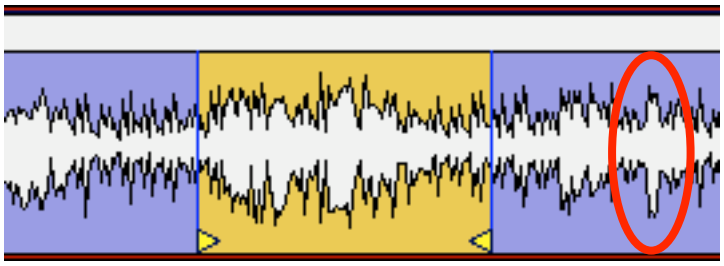

Figure 3.20: In Point and Out Point with highlighted area in between

There can be only one In Point and one Out Point in a Panel at any time. If both an In Point and Out Point are present, and if the In Point is to the left of the Out Point in the waveform display, then the area between the In and Out Point will be highlighted in yellow. The Selection > Set In Point command drops an In Point at the location of the Edit Point.

Note that the IN, OUT and DUR time fields at the top *right* of the main Project window are always active and fully editable. These fields allow you to precisely alter the location of, and

duration between, the In and Out Points, a functionality which comes out handy when the exact points are well known by their time value.

Once the region is defined, it can be modified in two different ways. The region can be either deleted or cleared. To clear the defined region, leaving an empty area, select the Edit > Clear Selection command.

Figure 3.21: A cleared selection — the circled material has not moved

The selected region now is cleared of its contents, leaving the audio before and after the selected region in the same place. The In and Out Points also stay in place. Effectively, you have now created two new segments that can be further edited and/or moved independently.

Alternatively, the selection can be deleted. To do so, select Edit, Delete Selection from the main menu. Hitting the delete or backspace key on the keyboard will perform the same action.

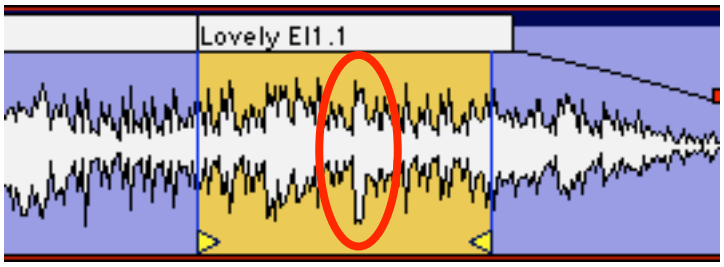

Figure 3.22: A deleted selection — the circled area has moved

As a result, the selected region will be deleted and all audio to the right of the selected region will be moved left to the beginning of the now deleted section, closing the "hole." Again, the In and Out Points stay in place.

Similar to clearing the selected region, you now have two new segments. When deleting the selection, however, the two new segments are joined together with a "Crossfade." It is represented in the waveform display as an overlapping Fade In and Out.

The delete functions mentioned above also work with one or more selected regions. Simply click–drag to select a region, and hit delete or option–delete.

Note that, when you have both Edit Points and region selections, PreMaster CD always defers to Edit Points rather than selections. This can easily lead to erroneous edits when IN and OUT Points are beyond the displayed area and the selected segments or regions are visible, leading to the user's perception of a non performing edit, meanwhile audio out of view has

been modified. Because of that, it is always a good idea to either choose Selection > Clear In & Out Points or check for the presence of Edit Points by glancing at the IN and OUT fields at the top right of the Project. Non–zero positive values indicate the location of an Edit Point.

3.8.3 Splitting a segment into new segments

Occasionally, existing segments need to be split in separate segments before further editing can be performed. This can be achieved by manually creating a new Crossfade within a segment.

To create a new Crossfade, simply place your cursor at the desired location, and double click. This moves the Edit Point to the click location. Then, select Edit > Create Crossfade from the main menu. A new Crossfade is created at the location of the Edit point. Also see section 3.8.2 above for information on deleting segments.

3.8.4 Manipulating Fades

With Crossfades, the Fade Tool can also be used to modify or move the fades, either as a complete Crossfade or as individual Black Fades. When the cursor is moved over a Crossfade, it changes into a pair of parallel horizontal arrows. The Fade Out changes to red while the Fade In changes to green.

To move the whole Crossfade either left or right, once again hiding and revealing audio on either side, simply click and drag the Crossfade to the desired location. Release the mouse button to drop the Crossfade at a specific spot.

To modify the fades individually, press the option key while modifying the Fade Out, and the Apple or command key while modifying the Fade In. With these modifier keys, the Fade Tool works as if the fades were isolated, as described in section 3.8.1 above. While operating on one fade of a Crossfade individually with modifier keys, the fade not being manipulated will deselect, indicated by its color changing to black.

If you decide that default duration of your crossfade is not right, simply hold down the shift key and place the cursor over the center of the crossfade until the cursor changes into the pair of parallel horizontal arrows. Click–drag up or down and the duration will increase or decrease, respectively.

Note that, to be able to do any of the above fade manipulations with accuracy, it may be necessary to zoom in until the Crossfade extends over a significant proportion of the waveform display. The View > Zoom To Previous command will zoom you out to your previous view quickly after such fine adjustments.

3.8.5 Changing the order of songs

It is not uncommon that the order in which tracks or songs appear on the final CD needs to be changed. There are two scenarios that are applicable to this need.

The simple case is where PQ metadata is already present. This would apply if either:

1. the command key is held down when audio is dragged into the top Panel of a Project, which automatically creates CD Tracks

2. PQ marks are added manually

See section 3.10.2 for more information on manually adding PQ metadata in order to use the Track Bar. For more information on automatically creating CD Tracks, see section 3.9.5 below. For more information on CD Track re–ordering with the Track Bar, the quick and easy method, see section 3.10.5.

If PQ metadata is not present, the songs or group of songs you want to move need to be present as separate segments. This can be achieved by either manually creating a new Crossfade or by deleting the space between tracks in an existing sound file, meanwhile creating new segments that can be moved and edited independently.

To create a new Crossfade, simply move your cursor to the desired location, and double click. This will move the Edit Point to the click location. Then, select Edit > Create Crossfade. Also see section 3.8.2 above for information on deleting segments.

Once the material is divided in the required number of segments, the re–ordering can be done. There are several ways this can be achieved. First, segments can be selected, then dragged and dropped into place. This allows you to change the track order very quickly, but may be inaccurate when placing the files with precision on the time line. Section 4.3 below discusses an autospacing option that helps with precise track timings.

To drag a segment, first select the segment by clicking on the white Title Bar at the top of any segment. See figure 3.7.2 above. Notice the bright yellow Drag Bar that appears under the Title Bar in any selected segment.

Figure 3.23: The Drag Bar

Click–drag the Drag Bar to move the segment to the desired location. Remember that shift–clicking or command–clicking on multiple segments will select contiguous or segments respectively.

Secondly, segments can be moved by altering their respective time line positions directly via the Move Segments window. Select the desired segments, then select the Edit > Move Segments... command. The Move Segments modal dialog appears, showing the current position of the first, or only, selected segment.

The desired new segment start time can now be entered directly into the time code address shown. Once the 'Move' button is clicked, the segment moves to the new location.

The Move Segments dialog offers three extra options. By clicking on the 'Where' button, you can select via a drop down menu the new start time for the segment:

- The current position of the Playhead
- The location of the In Point, or
- The location of the Out Point

There is also an SRP button that provides a list of any SRPs placed in the Project. By choosing one of these four options, the time display of the move segment window changes to the relevant time. SRPs, persistent markers you can place anywhere in time, are discussed later in section 4.7 below.

After choosing your option, clicking the 'Move' button will move the segment and close the dialog. Clicking 'Cancel' leaves the segment at its original position and closes the dialog.

3.8.6 Simple Track Spacing: AutoSpace

Once all your segments are placed in the right order, the AutoSpace function offers a simple but effective tool to change all pauses between songs to a pre-defined value. Simply select Edit > AutoSpace All Segments and all segments will be moved on the time line, with equal space between according to the Preference > Editing Tools > AutoSpacing Duration setting. In Preferences, the length of the AutoSpace can be set to 1, 2 or 3 seconds.

Note that, if a song is composed of more than one segment, then the AutoSpace command should be used with care as the command will "break apart" the song, autospacing its component segments. Also, the AutoSpace command should be used *before* you place PQ marks to prevent unwanted mark (re)location.

Also Note that, if segments have had their fade durations lengthened from the default setting, the AutoSpace command will not necessarily result in a desirable spacing. This is because the fade duration at the head and/or tail of one or more segments may be longer that the minimum 1 seconds spacing that is required between PQ Marks on a CD. If you use the fade tool to lengthen fades at the head or tail of a segment, you should manually space your segments by using the Selection > Select Edit Point to End command and the Drag Bar.

3.8.7 Exporting Selections & Segments

Selections, including both selected segments and selected regions, can be exported as AIFF or BWF files, with source resolution of up to 96 kHz sample rate and 16 or 24 bit word length. To do this, use the File > Export Sound File… command. It exports the audio with amplitude changes from segment gain, plus any Gain Overlay and plug–in processing.

To use this function, first click–drag in the top Panel to create a selected region and make sure the top two Panels are assigned, via the first two Desk strips, to Mix1 and 2. Then choose the destination directory with the Set file button. Finally, set the file type, word length and speed, then click the Export button. PreMaster CD will "play" the selected region, exporting the audio as it plays and as you hear it. The Edit After Export check box causes PreMaster CD to replace–edit the exported segment back into the Project.

Another use for the export command is consolidation of a complex edit or processing. The export command will cleanly "freeze" or "print" to disk a collection of instantiated plug–ins that will not play in real time due to host saturation or overload. This is because export operates out of real time and so is not constrained by real time timing and buffering issues.

Note that playing the material at 1x speed during export will not improve the quality so, it is recommended that, unless real–time playback is needed, you use the highest speed setting as it has better temporal resolution. Also, during high speed exports, the time display and Playhead do not operate in real time.

3.9 PQ Marks: Defining Metadata

While this section provides the basics on PQ and delivery, section 4.8 below delves into the details of delivery and this aspect of PreMaster CD…Once all of your tracks for the CD are put in the right order and spaces between the tracks are adjusted to taste, the PQ marks can be created. PQ marks generate the TOC or Table of Contents for the final replication master. PQ marks are shown in the black banner just below the time line.

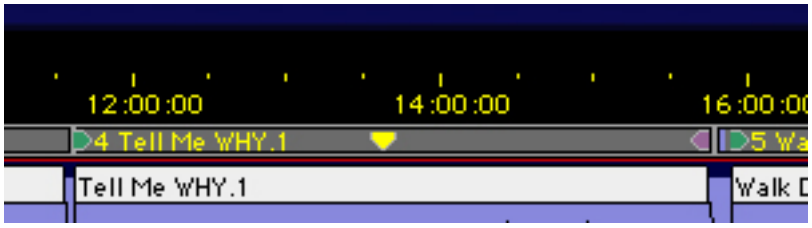

Figure 3.24: The Track Bar and its PQ marks

With the Track Bar visible, Start of Track marks are indicated by an arrow pointing to the right while End of Track marks are indicated by a arrow pointing left. Index marks are indicated by a yellow arrow pointing down.

3.9.1 Inserting PQ Marks Manually

To insert a new PQ mark, place the Edit Point at the location where you want the new mark to appear. Then select Mark > Track Start Mark, which adds the new Start of Track mark.

3.9.2 Moving PQ Marks

It's easy to relocate PQ marks. Simply click–drag on a mark to move it to the desired location.

3.9.3 Removing PQ Marks

To remove one or more PQ marks, click–drag in the waveform display to select a region that includes the mark(s) you want to remove. Then, select Mark > Delete Mark and all marks within the selected region will be deleted. If you are working in the Windows > Mark Info window and

have a mark selected, you can also use the Mark > Delete Mark command to remove the mark. The Mark Info window is discussed in detail in section 3.11.1 below.

A third method is to use the contextual menu to delete or otherwise modify a mark. Simply control–click on a mark, and make your selection from the menu.

3.9.4 Inserting PQ Marks Automatically

3.9.4.1 Command–Dragging

The fastest and easiest way to generate PQ metadata is to simply drag and drop. By holding down the command key before dropping one or more sound files onto the top Panel of your Project, PreMaster CD automatically creates CD Track definitions by generating Start and End of Track marks for each file. These Track definitions can later be rearranged or modified to taste. See section 3.10.5 below for more information of resequencing.

3.9.4.2 Edited Black To Marks

Apart from placing PQ marks manually at the desired positions, PreMaster CD has the ability to generate PQ marks automatically. If the entire Project was created by editing each song/segment, the most efficient way to generate PQ marks automatically is to Edit > Select All, selecting all segments, then select the Mark > Edited Black To Marks command. You can also click–drag to select a region, then select the Mark > Edited Black To Marks command. PreMaster CD automatically places Start and End of Track marks at the outside edges of all segments, using the location of Black Fades. The final result is a collection of marks accurately placed at the begin or end of each Black Fade.

3.9.4.3 Analog Black To Marks

If you've done a fair amount of fancy editing and track timing, then Edited Black To Marks may not be the ideal choice. Also, if you material consists of one long, consolidated file with few or no edits, then you may want to automatically place PQ marks with the Analog Black to Marks function instead. This function measures the amplitude of your audio and places PQ marks at the edges of long duration quiet passages. Both amplitude and duration are user adjustable.

To use, first click–drag to select a region on which to work. Then, select the mark > Analog Black To marks... command. In the resulting modal dialog, specify the amplitude and duration of the selected region you want to mark.

The results of the Analog Black To marks function are not as accurate as Digital Black to marks, but will provide quite usable PQ mark placement even with un–edited material. The placement accuracy is dependent on the settings used, as well as the assumption that tracks always start and end with an increase then decrease in amplitude and quiet in between. However, it is very likely that those same criteria also apply to other moments in the course of a musical piece so, the results of the Analog Black To marks function should always be checked for acceptable accuracy. You may also try the command, check the result and adjust the parameters prior to undoing or deleting marks and using the function again. See section 3.9.6 below for useful information on checking mark accuracy.

3.9.5 Tracks

PreMaster CD allows you to display and manipulate (CD) Tracks. The Windows > Preferences > EDL > Show Track Bar preference enables or disables the Track Bar. Each CD Track that will result from your current PQ placement is shown in grey while the pause between tracks is shown in blue.

Figure 3.25: An enlarged portion of the Track Bar and the Start of Track 1

3.9.5.1 Moving Tracks & Resequencing

A Track, *always with its associated pause from the previous End of Track mark*, can be selected by clicking on its Track Bar. Selecting a Track also selects the underlying audio that is associated with that Track. When you move a Track, you also move the associated audio. This means that you can quickly resequence your deliverable by dragging and dropping Tracks. The Track, with its marks, can be moved by click–holding a Track's track Bar, dragging left or right horizontally to a new position in the Track sequence, and dropping. The Track Bar updates to graphically display the new Track definition. You will also see the vertical blue Snap To Zone indicator when you drag the CD Track into the snap zone.

As mentioned earlier, when holding down the command key before dropping sound files, PreMaster CD automatically creates PQ metadata for all the files. Because only Start of Track marks are created, it makes it very easy to resequence using the Track Bar. On the other hand, the absence of End of Track marks means that there will be *no countdown* on the player's display when the resulting CD is played back.

You can also hold down the command and option keys, before dropping sound files, and PreMaster CD will create both Start and End of Track marks, instead of the Start of Track mark–only version that occurs with only the command key. The presence of End of Track marks makes it a bit less predictable when using the Track Bar for resequencing but, the presence of End of Track marks means that there *will* be a countdown on the player's display when the resulting CD is played back.

The Windows > Mark Info window is another way to move Tracks. As with the Track Bar, click–hold a Track entry and drag it up or down on a new position and drop it to resequence.

3.9.6 The Marks Button

In the Transport Controls, the Marks Button can be seen. Clicking on it reveals a list of all PQ marks in the Project along with their timings. Selecting one of the entries in the drop down list moves the Edit Point to the selected PQ marks, without changing the zoom level. This allows for a quick and accurate check of the position of all PQ marks.

3.10 Delivery

After completing the necessary editing of sound and PQ marks, the next and final step in your production workflow is to start a "Delivery." This process creates a new DPP image file set first, incorporating all edits and changes, ready to be sent to a replication service for glass mastering. The DDP file set is then used by PreMaster CD to generate your CD in the background.

DDP or Disc Description Protocol is the industry standard method for delivering all the data and metadata needed for disc replication to a "pressing plant." Unlike audio CDs, DDP file sets contain error–protected audio data plus all ancillary metadata or, "data about the data." DDP file sets, when used for replication, avoid potential errors that can crop up between the time you create a replication master and the moment that a "glass master" is created during replication. CD-DA discs, or audio CDs, do not protect the audio data from errors since they assume that the CD player will hide or "conceal" any errors during playback. This situation leads to errors in replication when recordable CDs, formatted as Red Book (audio) discs, are used as replication masters.

Note that the DDP files created by PreMaster CD, always in their enclosing folder, can be copied to any writable medium you choose, DVD-R, data tape or hard disk, for transport to the replicator. Of course, the medium you choose must have enough space to hold the file set. Also, always check with your replicator to determine which physical medium and format they can handle and whether they are even capable of using DDP as an premastering format. Many bargain companies are not ready to handle DDP deliveries so, we at Sonic Studio suggest you find a reputable facility that does accept DDP file sets of your valuable masters. Check the Support section of the Sonic Studio web site <www.sonicstudio.com> for a list of DDP–friendly replication facilities worldwide.

3.10.1 A Check List for Delivery

First, when burning CD-R "check discs," always put the unwritten, blank disc in the drive *before* starting the delivery process.

Second, when delivering a DDP file set, use DVD-R blanks rather than CD-R blanks to deliver your DDP file set. That way, the replicator cannot confuse a CD-R with DDP files as a CD-ROM job and replicate 1000 CD-ROMs of your DDP file set!

Third, when delivering a DDP file set, the *entire* DDP folder or directory must be sent to the replicator. We suggest you ZIP the whole thing and generate a check sum for the resulting ZIP file. For more information, see the Checksums for DDP section of our Knowledgebase page:

http://www.sonicstudio.com/support

Fourth, check your Mark Info window for metacharacters, such as $, & and %, as well as extended ASCII characters, like å, é, ø, ö, ü, ñ, et cetera. Mac OS, which PreMaster CD uses to write CD-Rs, does not handle extended ASCII and metacharacters properly.

Finally, when delivering a DDP file set, we recommend that you always create a new, empty folder to contain each DDP file set. On the Desktop is a reasonable place for that. That makes it easier to archive and seems to prevent common problems.

3.10.2 The Mark Info Window

To begin the PQ Delivery process, select the Windows > Mark Info command. This opens the Mark Info window which displays all the P through W subcode metadata you have defined.

3.10.2.1 Global Metadata

At the top of the Mark Info dialog are three fields that define global information about the disc. The Album Title and Artist generate the disc's global information that, when placed in a transport that reads CD Text data, will appear on the transport's display.

CD Text, a subset of the CD+G specification, provides for the embedding of textual information about the overall disc and tracks in the R through W codes of the "PQ" subcode stream of a Compact Disc. Many portable and in–dash car players can read CD Text data off of a disc, but few home players can.

CD Text should not be confused with network services such as Gracenote's CDDB or FreeDB that attempt to match CDs inserted into a computer drive with an on–line database of extant CD titles. Such network services are used by iTunes and other applications for user convenience but have no relationship to the possibly embedded CD Text information on individual CD's.

Note that PreMaster CD 3.0 can now produce CD-Text for DDP image file sets.

3.10.2.2 Track Metadata

This section provides information about individual track attributes. The next two fields, Track Title and Track Artist, are also part of the CD Text specification, and data entered into these fields will also appear on CD players equipped to read this metadata. PreMaster CD auto–populates the Track Title based on the segment name and, if you have provided an Album Artist prior to PQ creation, PreMaster CD will also auto–populate the Track Artist metadata as well.

Track Start and Track End are generated by your mark placement. Though editable, you should assume that they are correct. Likewise, the Copy and Emphasis buttons generate the SCMS (Serial Copy Management Scheme) Copy flag and AES/EBU Emphasis flag in the PQ stream and should, in general, be left turned off. Section 4.10 below discussing PQ parameters in more detail.

3.10.2.3 Track Listing

The next section in the Mark Info dialog provides a list of details about each defined track. Name, start and end times, as well as duration are shown.

Double clicking on an entry in the list will start playback at that location in the Project. This gives you a quick method for double checking mark placement. See section 4.10.4 for details about the Track Listing, Total Tracks and extended listing.

Note that, if you have placed your (text) insertion point in the TRACK TITLE, ARTIST and ISRC fields, the up/down arrow keys on the keyboard will move you up and down through each entry in the list of PQ details.

3.10.2.4 PQ Status & Validation

Below the Track Details section is a single field with an indicator to its left. This is the PQ Validation field, a non–editable status field that indicates whether your metadata, as defined, is valid and meets the Red Book specification for Compact Discs.

A green indicator means everything is valid, while a red indicator mean you should inspect your PQ information for non–Red Book–compliant entries. The accompanying field calls out the problem entry, making it easy to rectify the problem.

3.10.2.5 Device & Status/Validation

The Device field provides a list of available disc writing devices, and provides details about the (selected) mechanism. To the right of the Device label is a selector that, for multiple connected mechanisms, allows you to choose the target device. The Status field provides an indication of the status of your delivery media and/or progress on the delivery.

Note that you may see a "Sound begins more than 2 frames before Start Mark" message. This a reminder to check that you are not unintentionally truncating any audio at the head of your Project. Remember that, according to the Red Book specification for CD-DA discs, the first 2 seconds or 150 CD frames are "pregap," and the first track start is at 2 seconds. Any audio before the 2 second mark will be replaced by 150 CD frames of digital zeroes on any CDs delivered and in DDP file sets. Pregap is a logical region of the disc reserved for mode changes and other non–audio functions.

3.10.2.6 The Execute Button

Once the above options are set, this button starts the process of creating a new delivery, written to the location shown in the "Path/Device" field. When you click the Execute button, a standard Mac OS file browser opens where appropriate, allowing you to specify the location that will be used. A new or empty folder should be specified to contain the newly created or modified DDP file set. Once the destination is specified, PreMaster CD begins the delivery process, with progress shown in the validation field at the bottom of the PQ Delivery window. During delivery to a CD-R when no media is present in the selected drive, PreMaster CD will prompt you to insert media and wait for a blank disc to be inserted.

Note that, once a delivery has started, the Execute button changes to an Abort button, allowing you to halt the delivery process. If a delivery is aborted, the resulting CD-R or DDP image file set is not reliably usable for either duplication or playback purposes.

3.10.2.7 The Eject Button

The Eject button will cause the host to eject an inserted disc from the selected CD writer.

3.10.2.8 The PQ List Button

This button generates a Sonic Studio–standard PQ List, the industry's standard text representation of a compact disc's table of content. This file is typically printed and a hard copy sent, along with the DDP data set, to your replicator.

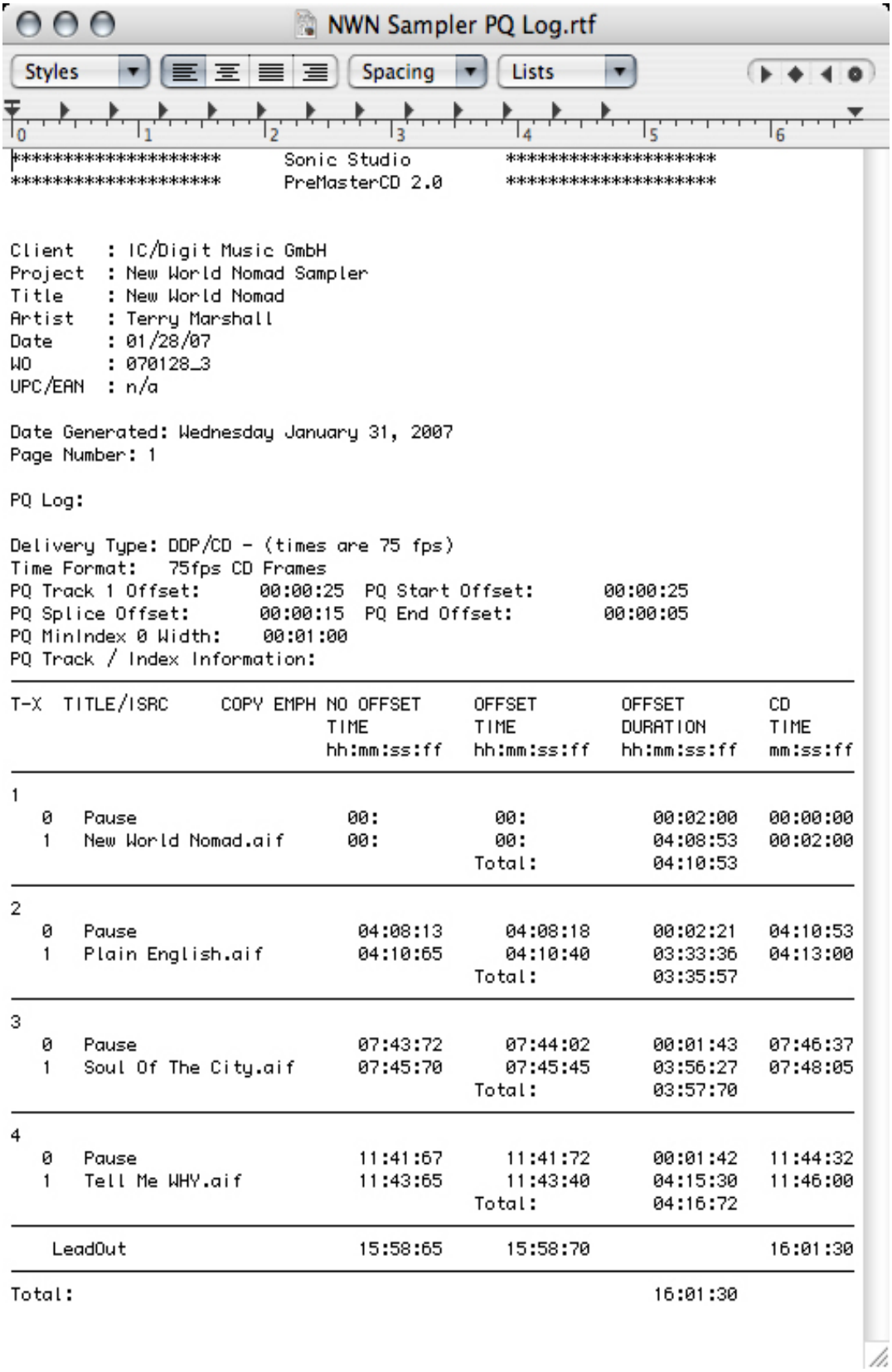

Figure 3.26: A PQ List open in TextEdit

4.1 Fade Tool Options

4.1.1 Changing Fade Parameters

PreMaster CD offers a simple and intuitive tool for changing a fade's gain characteristics: the Fade Tool. In the previous chapter, we have seen how to use this to perform simple operations. The Fade Tool offers additional possibilities to alter fades according to your needs and preferences.

The Fade Tool is enabled by default. By holding the control key and typing A, you can quickly disable or enable the Fade Tool. Alternately, you can force the Fade Tool off by default. In the EDL tab of the Windows > Preferences window, the Fade Tool check box keeps the Fade Tool enabled until you choose to disable it manually.

When moving the cursor over a fade with the Fade Tool enabled, the default cursor changes into the Fade Tool and the selected fade turns either green for an Fade In, red for an Fade Out or both. Depending on cursor location relative to the fade, the Fade Tool modifies the start, end, length or position of the fade. See section 3.8.1 for basic information about the Fade Tool.

If you zoom in on a Fade so that more than about 10% of the waveform display is occupied by the fade, you will see the thin blue vertical line that represents the edit event and a diagonal line or "curve" that represents the gain law or change in amplitude dictated by the fade. Situated in the middle of the diagonal curve and attached to that line is a square "bead," the Control Point for the fade curve.

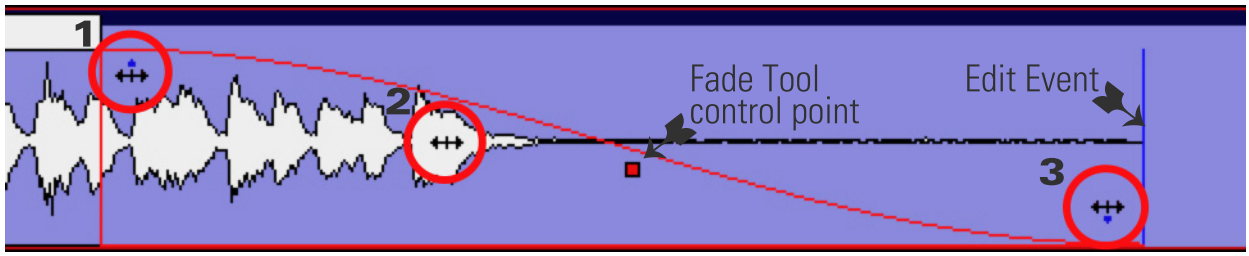

Figure 4.1: Anatomy of a Fade

Figure 4.1 above shows the major parts of a Fade and the various contextual shapes that the cursor assumes based on location. Note the Control Point and edit event, discussed in upcoming sections.

On the left, the #1 cursor is set for an "inboard" duration change. Placing the cursor at that location and click–dragging will increase or decrease the duration of the fade without changing the edit event location or gain law. This is the preferred handle to use when changing duration.

Next is the #2 cursor shape, displayed when the cursor is set to change the overall location of the fade. Placing the cursor in that location and click–dragging will re–locate the fade, "sliding it" earlier or later on the time line without changing the duration, edit event or gain law. Remember that you cannot move a fade past the head or tail of the underlying audio.

In position #3, the cursor is set for a duration change "toward the outside" of the Fade. Placing the cursor in that location and click–dragging will increase or decrease the duration of the fade without changing the overall location or gain law. These "outboard" handles *do* effect the location of the edit event, so it's recommended that you not use the outboard handle, employing the inboard handle instead as mentioned above. Section 4.1.4 below discusses edit events as they relate to controlling fade parameters.

4.1.2 Changing the shape of the Fade

By clicking the Control Point "bead," shown in Figure 4.1, and dragging it up or down, you can adjust the rate of change setting for the fade. Specifically, for all fade types except exponential, moving the Control Point adjusts the "dB down" while, for an exponential fade, the Control Point adjusts the "Alpha" or shape. In either case, as you make this change, the fade curve will dynamically change in response and the underlying audio will also change since you are affecting the gain across the fade event.

When the FadeTool is active, holding the control key brings up a contextual menu.

Figure 4.2: The FadeTool contextual menu

The FadeTool contextual menu offers the following choices for gain law or curve:

- Linear — default 6 dB down in the center
- Root Linear — 3 dB down in the center
- Cosine — default 3 dB down in the center
- Root Cosine — default 6 dB down in the center
- Exponential — provides very rapid reduction in gain across the Fade

PreMaster CD provides five fade shapes to allow you to produce a pleasing edit or transition, no matter what sort of material you have available. You can also use fades for less obvious purposes, such as applying a new Crossfade on an unwanted sound, changing the gain law to exponential, and adjusting the duration to "drop out" or suppress the unwanted sound. Though each gain law is useful in certain situations, the linear fade shape is the most widely applicable.

4.1.3 Changing the Fade Duration

In the Fade Tool contextual menu, the Set Fade to Selection forces the fade duration to match the duration of a selected region that encloses the fade. When a region is selected, this option stretches or shrinks the length of the Fade to match the position and length of the selected region. The contextual menu changes to reflect the currently selected Fade Type.

The Fade Tool functions also apply to a Crossfade. Figure 4.3 below shows the Fade Tool in Crossfade Mode. Notice that the cursor assumes a double horizontal arrow shape and both fades are highlighted, both green and red.

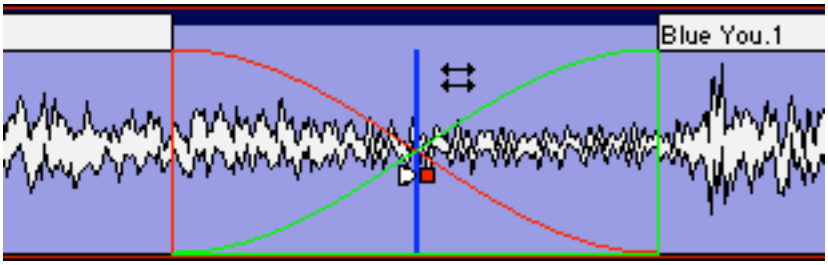

Figure 4.3: The Fade Tool in Crossfade Mode

By click–dragging left or right, the overall Crossfade location can be altered. By shift–click–dragging, notice the cursor shape changes to a vertical arrow, the Crossfade duration can be symmetrically altered. Holding the command key allows you to override symmetrical mode and alter duration with the left edge achored while holding the option key provides the same override mode for the right edge.

4.1.4 Changing the Fade Type

The Fade Tool contextual menu also offers two choices for fade type. These choices, accessed by hold the control key while using the Fade Tool, allow you to change the context in which the fade will be used. For the purpose of CD preparation, Fade Ins and Fade Outs are fundamentally different from Crossfades. The difference is where the actual edit event occurs in the underlying audio and this subtly but profoundly effects the accuracy of your PQ marks and resulting

metadata, since the edit event is where PreMaster CD places the PQ marks in any of the automatic modes.

With a Crossfade, the edits occur at the very center of the two Black Fades (see section 3.8.1). Fade Ins and Fade Outs, on the other hand, are designed to be used as the transition to or from "Edited Black," where no audio is present on the time line. Use the Set Fade to Crossfade option when you expect to connect its associated segment to another segment for a seamless edit between segments.

The 'Set Fade to Default..." options force all fade parameters back to their appropriate defaults.

- Set Fade to Fade In/Out: forces parameters to the appropriate default Black Fade
- Set Fade to CrossFade: forces parameters to a default Crossfade
- Set In/Out Fade(s) to Selection: forces either a Black Fade or Crossfade to the duration and overall location of a selected region.
- Set Fade To Default...: changes the Fade(s) based on user defined pre–sets from the EDL > Edit Fade Mode.

When the Fade Tool is active, any change you make using the tool, to a Fade or to the underlying audio is real time. The default fade shape can be selected in the Editing Tools tab in Windows > Preferences.

4.2 Drag & Drop

4.2.1 Resequencing

For rapid assembly of program material, PreMaster CD provides three easy methods for automatically snapping to either 1, 2 or 3 seconds of Edited Black between segments.

4.2.1.1 AutoSpace All Segments

The first method is the Edit > AutoSpace All Segments command discussed in section 3.8.6 above.

4.2.1.2 Drag & Drop

The second method entails manually dragging CD Tracks. Dragging Tracks requires that the Show Track Bar preference in the EDL tab of Windows > Preferences be enabled. Once Track Bars are visible, click–hold on any song's Track Bar to select it, and drag it to the desired location. Existing Tracks "shuffle" into place and the dragged Track takes its place, where dropped, in the CD track sequence. The audio associated or "attached" to the marks shuffles along with the marks. The pause between an End of Track mark and a subsequent Start of Track mark are always considered to be part of that Track.

Figure 4.4: The Track Bar

This same drag–to–resequence behavior is also available in the Windows > Mark Info dialog. Simply drag an entry in the track list to a new location to resequence Tracks.

4.2.1.3 Snap to Zone

The third method entails manually dragging and snapping segments to a pre–defined song timing. It is best to drag segments if you have not created PQ marks to prevent unwanted mark relocation.

This drag and snap segments method of resequencing requires that the Snap to Zone preference in the Editing Tools tab of Windows > Preferences be enabled. Once the Snap Zone preference is set, click on a segment's Title Bar to select it. After it's selected, all you have to do is click–drag on its Drag Bar as you move its head close to another segment's tail. You will see either a vertical red or blue bar appear, visually indicating you are in the snap zone.

Figure 4.5: The Title Bar and Drag Bar

Figure 4.6: The red auto–spaced snap indicator

Figure 4.7: The blue flush snap indicator

The bold blue bar indicates a "flush" snap where, if you drop at that location, the two segments will be tightly butted with no space, no Edited Black in between. The bold red bar indicates an auto–spaced snap where, if you drop at that location, the two segments will have a precise, preset space between. The duration of the inter–segment spacing is determined by the AutoSpacing Duration selector in the Editing Tools tab of the Windows > Preferences window.

Drag and drop with autospacing is useful in conjunction with the Edit > Clear/Delete Selection commands to start with one long continuous segment, such as a consolidated complete mix, and quickly segment, space and resequence the individual songs.

Note that, when using this fully manual method, sequencing should be performed prior to mark placement. This will prevent erroneous repositioning of marks as your segments are shuffled.

4.2.2 Drag–Overlay

When you drag and drop one segment on top of another, with no modifier keys employed, one segment will overlay another when you drop it on top. The two segments coexist in the same location on the time line and sum together during playback. This feature is useful when used in conjunction with Text Mode, discussed in the next section, so you can individually control the overlapping segments. Also see section 4.3.2 below for creating a combo Project, a combination waveform plus text Project layout.

4.2.3 Drag–Insert & Ripple

Shift–dragging segments is another useful editing feature. With the shift key held down, the dragged segment is inserted when you drop it on top. In addition, "downstream" segments, those later on the time line, are pushed or "rippled" to the right, making room for the inserted segment.

4.2.3 Drag–Replace

When you command-drag and drop one segment on top of another, then the dragged segment replaces the existing audio where it's dropped. As with all editing in Sonic Studio's products, this move is non–destructive.

4.3 Text Mode

Text Mode provides a playlist view of the Panel's contents, with editable segment names along with editable start and end times. An editable Gain value, see section below, along with a non–editable Duration value are also shown. To view Text Mode, select the EDL > Show Text View command. To switch back to Waveform mode, select the EDL > Hide Text View command.

4.3.1 Gain Adjustment

Compiling audio from different sources usually makes it necessary to alter the amplitude of some of your source material. The last column in Text Mode displays the current gain of all segments. When Segments are opened or added to the EDL, the segment gain is nominally set to zero dB. By double-clicking on the Gain value of the selected segment, the Segment Gain modal dialog opens.

The Segment Gain dialog is also available via the Edit > Segment Gain… command for selected segments, and also via a segment's Title Bar contextual menu. Control–click on any Title Bar to invoke the Segment Gain dialog. Other functions, like Reverse Polarity and Build Waveforms, are also available. As with other modal dialogs in soundBlade, gain changes will not be applied unless the OK button is clicked.

Figure 4.8: The Segment Gain dialog

The Segment Gain dialog offers several options for altering segment gain. It also provides polarity inversion.

The large central field lets you enter gain directly. Alternatively, course and fine adjustments are available via up/down arrows. Simply click the arrows to increment or decrement gain in 1.0 or 0.1 dB steps.

Segment Gain can be applied in two different ways. First, it can be applied as an 'Absolute' value, meaning that the entry in the gain field will be applied in place of any previous value. The value entered in the gain field will *replace* any previous state, ignoring the existing gain of that segment.

Alternatively, the gain can be applied as a 'Relative' value. In relative mode, the entry in the gain field will be added to or subtracted from the previous value. Positive values will be added to the previous state while negative values will be *subtracted from* the previous gain state.

A third 'Normalize' radio button is available. Choosing this option will cause the segment's absolute sample amplitude to be evaluated, after which the amount of headroom or surplus level below 0 dBFS will be entered in the central gain field. In other words, this function shows how much gain can be added before digital clipping will occur. The value given is relative to the current gain state so, the normalize function is a subset of a relative gain adjustment.

Though not a gain function, a Reverse Polarity check box is available. This check box inverts the polarity of the selected segments.

Segment gain can be applied to multiple segments at once. Simply command–click on the desired segments in the Text View list, then open the Segment Gain window to make a change.

Changes in Segment Gain will be applied to all selected segments equally, as described above. This implies that, in relative mode, the gain changes will retain any relative loudness differences between selected segments. In normal use, Segemnt Gain is used on individual segments to make them play seamlessly or as desired. Once the entire show has been gain adjusted, then all segments can be selected and normalized, thus maximizing the amplitude for the whole program.

4.3.2 Combo Project Configuration

Note that, if you find that you use Text Mode a fair amount, you may want to create a special default Project that combines both Waveform and Text mode. To do this, open a new, empty Project. Now, click on the bottom Panel to select it and change it to Text Mode with the EDL > Show Text View command. Finally, save it as the default Project with the File > Save As Default Project command. Once this is set, all new Projects will have a left and right waveform with an additional right channel Text Mode.

4.4 Gain Overlay Mode

As described in section 4.3.1 above, the gain of individual segments can be easily changed with the Segment Gain dialog. PreMaster CD offers another, global, time line–oriented approach to changing amplitude. Gain Overlay Mode can be used to change level independent of segments and fades and works as a master automated fader.

Gain Overlay Mode is enabled by clicking on the G button to the left of a Panel, and is available only when in Waveform Display Mode. When enabled, a red line appears superimposed on the waveform display. The waveform display's amplitude scale, along the left edge, switches to a different standard that ranges from -144 to +24 dB, the range of gain change available. Initially, the Gain Overlay is flat at the 0 dB setting.

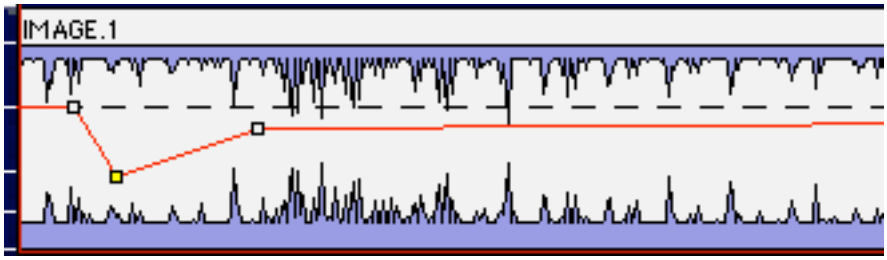

Figure 4.9: Gain Overlay function activated, showing the red Overlay and Nodes

To change gain, simply point at the desired time location and click on the Overlay. The cursor changes to a round shape and a square Node will appear. Nodes can only be added, deleted or modified while playback is stopped.

You can also place gain nodes with region selections or the Edit Point. To use this function, first click–drag within the waveform display to select a region. Then, select Edit > Create Gain Nodes to add two nodes at the "edges" of the Gain Overlay and the selected region. Because the Edit Point is really a zero duration selection, it can also be used to create a single gain node with the Create Gain Nodes command.

When you add a node, a yellow highlighted Gain call–out appears in the Title Bar of the associated segment.

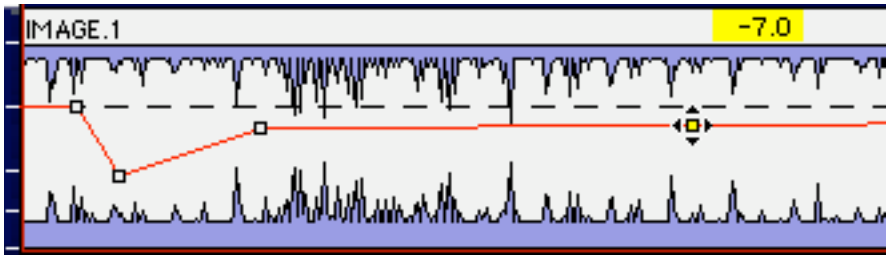

Figure 4.10: A newly created Gain Node with its Gain call–out

If you click–drag a Gain Node, it can be moved both horizontally and vertically. Dragging a Gain Node horizontally moves it to a different time location while dragging it vertically changes the gain. The current gain value of that node is continuously shown in the yellow Gain call–out.

When moving Gain Nodes vertically, the gain changes in steps of 1 dB. By holding the option key while dragging a Gain Node, the resolution of the gain change increases to 0.1 dB to provide fine control.

Note that gain changes between Gain Nodes follows a linear gain law. By adding multiple Nodes, other curves can be emulated. Unwanted Gain Nodes can be deleted by holding down the option key while clicking on the Node.

You can make changes to a group of Gain Nodes simultaneously. To do so, select a region that includes the Node on which you want to work. Then, select the EDL > Select Gain Nodes command. All selected Gain Nodes will fill with yellow to indicate their state. You can also shift–click to "gather" a collection of grouped Nodes.

When grouped, only the gain can be modified. When changing the gain of grouped Nodes, the Gain call–out shows both the current value and gain delta or difference from the original value. Also, when grouped, holding the option key for fine gain adjustment is disabled.

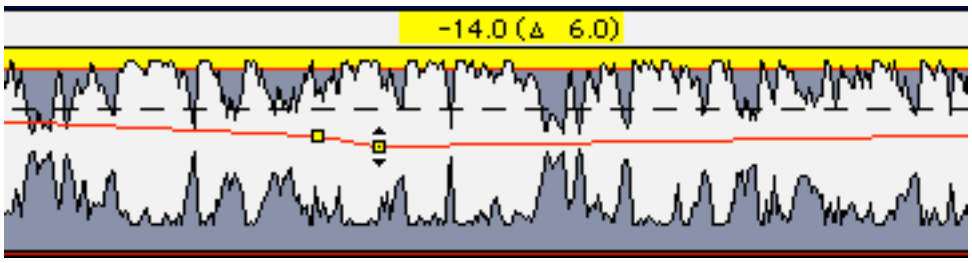

Figure 4.11: The Gain call–out for grouped Nodes

Once your Gain Overlay is configured according to taste, all or some Gain Nodes can be locked against unwanted changes. To do so, first click–drag to select a region containing the Gain Nodes you want to lock. Then, move the mouse over one of the selected Gain Nodes and control–click to invoke a contextual menu.

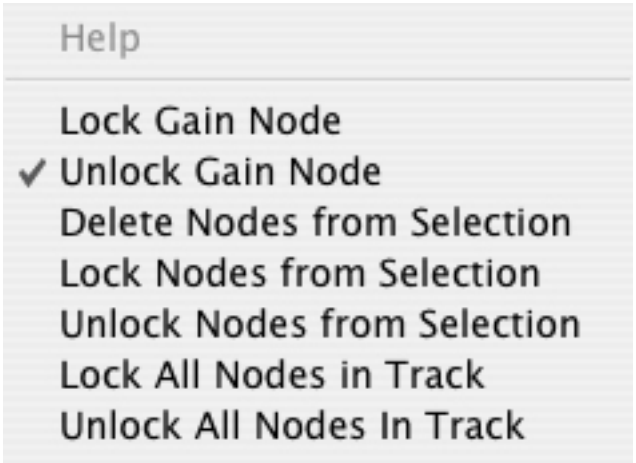

Figure 4.12: The Gain Node contextual menu

By default, the Unlock Gain Node option will be checked. To lock the selected Gain Nodes, click on the GainOverlayNode Locked option. The selected Gain Nodes will now turn red to indicate their locked status. Unlocking the Gain Nodes simply requires selecting the GainOverlayNode Unlocked option.

In the same contextual menu, Nodes can also be locked and unlocked for the whole Panel by selecting the Lock/Unlock All Nodes In Track options.

Delete Nodes from Selection deletes all Gain Nodes in the current selection. If no selection is made but one or more segments are selected, all nodes within the selected segment(s) will be deleted.

Once Gain Overlay is used, the gain changes stay active in the output of PreMaster CD, both during playback and Delivery. To temporarily bypass the Gain Overlay, select the EDL > Bypass Gain Overlay command. Also, the Gain Overlay can be put into bypass mode by option–clicking the "G" or Gain button on the left side of each Panel. In both cases, the Gain Overlay line will turn grey and the Gain button will turn yellow, both indicating the bypass state. Once in Bypass, Gain Overlay can only be activated again by selecting the same command, which changes to Activate Gain Overlay. When off or disabled, the Gain turns grey.

Note that, while in Gain Overlay Mode, all normal editing functions are disabled and only the gain nodes can be manipulated. Reverting to normal Editing can only be achieved by selecting the Hide Gain Overlay command.

4.5 SRPs

SRPs or Selection Reference Points are persistent placeholders that are saved in a Project. SRP commands are under the Selection menu, and are placed either with the Edit Point, the Playhead or, at the leading edge of a selected region. They can be locked to the time line, unlocked and deleted. Option–clicking allows you to drag them to a new location on the time line. They also carry a optional comment label that's useful to jog yours or someone else's memory at a later date.

As with many objects in PreMaster CD, SRPs have their own contextual menu. Control–clicking on an SRP brings up the following menu;

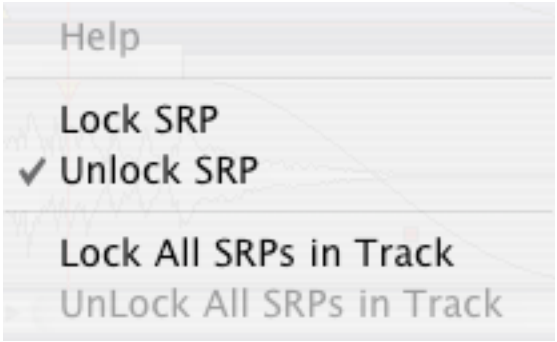

Figure 4.13: The SRP contextual menu

The menu offers the following options:

- Lock SRP
- Unlock SRP

- Lock All SRPs in Track
- Unlock All SRPs in Track

Note that the last two options are global in nature and will change the state of all SRPs present, regardless of region selection. Also note that, if an *unlocked* SRP is enclosed within or touches a segment, it will become associated with that segment and will move if the segment is moved.

4.6 Edit Groups

Sometimes a monaural edit is needed on a stereo pair. PreMaster CD provides a simple "Edit Group" control to depart from the default behavior of performing edits on both channels of a stereo pair when you operate on only one. The default Edit Group mode is stereo, as indicated by the stereo Edit Group indicator.

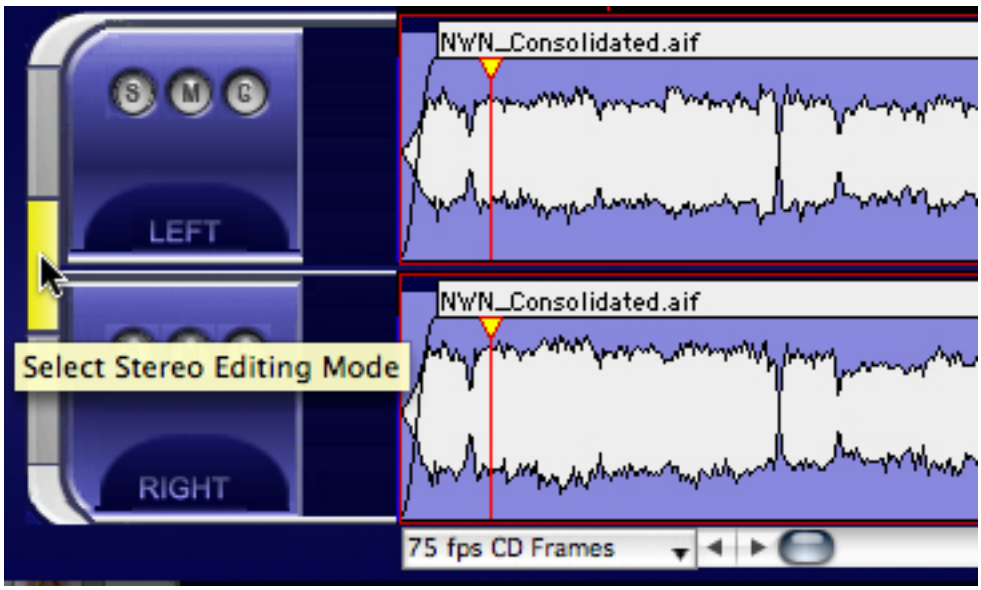

Figure 4.14: Stereo editing mode

The stereo editing mode selector straddles the two Panels. Above and below the stereo editing mode selector are the two mono editing mode selectors for each channel. Click on any of the three editing mode selectors to change mode.

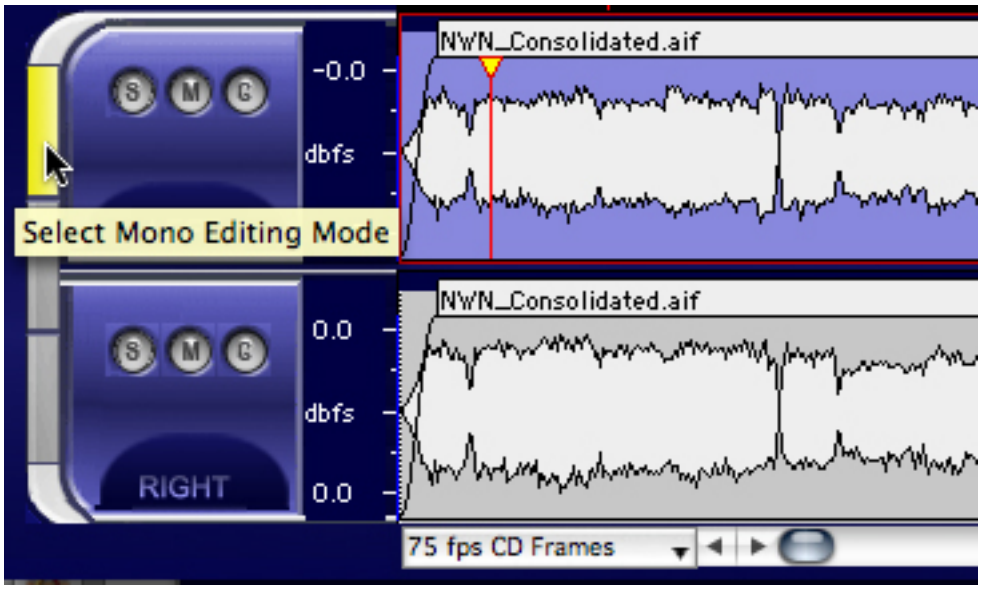

Figure 4.15: Mono editing mode

Simply click on either mono selector to make changes to one channel or the other exclusively.

4.7 Project Sample Rate

To the left of a Project's time line, a drop down menu is located for selection of the Project default sample rate. This menu has a simple function, to set the sample rate when making address calculations on the time line. Since, "under the hood," PreMaster CD uses samples per second as the counting method for all time code, time line and address calculations, sample rate becomes the basis on which all the above calculations are made. PreMaster CD converts all thirteen of the alternate, non–"samples" time standard choices, discussed in section 3.7.1, to samples when constructing a Project.

Note that the Project default sample rate has nothing to do with the sample rate of any audio interface used, nor does it impact the clocking of your system. It is only for locating segments on a Project's time line.

4.8 Advanced PQ

Section 3.9 above covers the basics of PQ creation and manipulation. This section delves into some arcana of the P through W metadata functionality in PreMaster CD.

All PQ information and additional metadata can be viewed and modified with the help of the PQ Info tab in the Mark Info window. It can be opened by selecting the Windows > Mark Info command.

Figure 4.16: The PQ Info tab of the Mark Info window

Apart from the PQ information, this window contains additional fields for Album Title, Album Artist, Track Title and, for compilations, Track Artist. These fields provide input for the generation of CD-Text metadata. Additionally, ISR Codes or ISRC, and a Universal Product Code/European Article Number, or UPC/EAN, code can be entered as well.

ISRC or International Standard Recording Codes are unique, machine–readable identifiers for each track on a disc. On the other hand, UPC/EAN identifies the *entire* disc. Both UPC/EAN and ISRC are discussed in detail below.

Creation of PQ marks must follow a few simple rules, laid down in the "Red Book" or Compact Disc–Digital Audio (CD-DA) specification. The most important of these rules are:

- There is a maximum of 99 tracks allowed on a CD
- There is a maximum of 99 indexes allowed within each track
- Index marks are not allowed between End of Track and Start of Track marks
- The minimum duration of a track, the minimum distance between Start of Track and End of Track marks or two consecutive Start of Track marks, must be 4 seconds, including offsets.
- Two consecutive End of Track marks are not allowed but two consecutive Start of Track marks are allowed

PreMaster CD validates the PQ marks against Red Book specifications and shows the result at the bottom of the PQ Window.

Note that Index marks are infrequently used as most CD players available do not offer the ability to locate to Indexes.

4.8.1 Album Info

4.8.1.1 Album Title

In this field, the title of the album can be entered.

4.8.1.2 Album Artist

In this field, the artist's name can be entered.

4.8.1.3 UPC/EAN Code

This is the product's Universal Product Code/European Article Number, usually displayed as a barcode on the package. EAN barcodes are typically 13 digits and, in the United States, the leading digit or country code should be set to zero before entering the additional 12 trailing digits of a UPC.

4.8.2 Track Info

4.8.2.1 Track Title and Track Artist

These text fields directly represent the title and artist of the selected track in the list below. These fields are used to generate CD Text metadata.

PreMaster CD assigns default names to marks and the tracks they generate. The Start marks are numbered and named based on their associated segment's name. The End marks and Index marks are not numbered, and are called End and Index respectively.

You can assign your own names to the marks. Just select a mark from the Track Info list, type a new name into the Track Title field, and hit the enter key. The new name will appear in the list, in the CD Text metadata, and also in the Track Bar, if visible. All this information is saved as part of the Project.

Track Artist is entered in a like manner. Select a mark from the Track Info list, type an artist into the Track Artist field, and hit the enter key. The artist's name will appear in the list and also in the resulting CD Text metadata. If, prior to mark generation, you enter an Album Artist, as mentioned in section 4.8.1.2 above, PreMaster CD will automatically use that text string for the Track Artist.

Note: You should always check your Mark Info window for metacharacters, such as $, & and %, as well as extended ASCII characters, like å, é, ø, ö, ü, ñ, et cetera. Mac OS, which PreMaster CD uses to write CD-Rs, does not handle extended ASCII and metacharacters properly.

4.8.2.2 Track Start

This field displays the location of individual marks. The location can be edited by typing directly into this field. The corresponding PQ mark will be moved accordingly.

4.8.2.3 Track Offset

This field shows the offset, if any, that is applied to the selected mark. If the default offset is not appropriate, you can enter a custom offset for every mark.

4.8.2.4 ISR Code (ISRC)

This field shows the International Standard Recording Code or ISRC, if any, that is associated with the selected Start of Track mark. When a record label provides ISR Codes for a title, as is usually the case, check the following guidelines to insure that the ISRC is valid: There must be exactly 12 characters. The first 5 places must be numeric or uppercase letters. The 6th through 12th places must all be numeric. Although often supplied with them, dashes or hyphens should be removed from the ISR Codes prior to entry in the Mark Info window.

Like UPC/EAN mention in section 4.8.1.3 above, ISRC cannot be self–assigned and must be created in conjunction with the IFPI <www.ifpi.org> or one of it's local branches. See Appendix 4 for more information on the IFPI.

4.8.2.5 Lock Check Box

The Lock check box locks the PQ times for the selected CD Track to prevent inadvertent changes. When a Track is locked, its appearance in the Track Bar changes from the normal shape and color to a yellow, right pointing triangle.

4.8.2.6 Default Check Box

The Default check box forces an individual CD Track back to the default timings setting.

4.8.2.7 Copy Enabled Check Box

This check box displays and controls the state of the Copy Enable bit, the "flag," of the SCMS or Serial Copy Management Scheme. The flag is set and copying is enabled when the Copy Enable button is red.

The default state for this button is off. That is, copying is not allowed.

SCMS or "scums" flags, implemented for consumer digital recording devices, are generally ignored by professional audio equipment. Consumer digital audio equipment however, broadly recognises the SCMS bit and inhibits the possibility of making digital copies from CD's with the SCMS flag set. Hence it is common practice to disable the SCMS on CD-Rs or DDP masters intended for duplication.

4.8.2.8 Emphasis Check Box

This check box shows and controls the state of the AES/EBU Emphasis flag or bit of the selected track. When the Emphasis flag is set, a CD player will de-emphasize the track on playback. The Emphasis flag is set when the button is red.

Note that digital emphasis is rarely, if ever, used in modern production. This flag provides backward compatibility with archival material that employed emphasis as a form of perceived noise reduction at the expense of reduced high frequency headroom. Do not set the Emphasis flag unless you are sure that emphasis was applied to the original data and that it has not been de–emphasized prior to use in your PreMaster CD Project.

4.8.3 A Word About PQ Offsets

In the Mark Info dialog, the Track Offset field is non–editable. This because PQ Offsets are applied globally, based on your Windows > Preferences > Delivery > Offsets preferences.

PQ Offsets are correction factors, subtracted from absolute song timing, to compensate for deficiencies in real world CD transports. They attempt to correct for the variation found with a CD transport's ability to locate to an address, fill its audio data buffer, unmute the audio output and commence playback. Less expensive transports typically require back–timing, hence the PQ Offset, to make sure the buffer is full prior to track start so audio is not cut off by the transport's muting circuit. With Offsets enabled, the factory defaults are very conservative and will produce satisfactory results with even the lowest quality transport but, always deliver a copy of your CD and check a range of target transports for an optimal setting.

Note that, as a rule, offsets are applied during the delivery of an original CD or DDP file set. The Windows > Preferences > Delivery > Offsets > Disable Offsets check box will enable or disable offset compensation. Offsets are applied globally to an entire Project.

4.8.4 PQ Track Info

4.8.4.1 Total Tracks & Extended Listing

This field shows the total number of Start marks that will appear on the disc. To the left of the Total Tracks field is an unmarked Extended Listing check box that, when unchecked, simplifies the Track Listing by hiding End of Track Marks and Indexes. This mode, showing only the essential CD Track information, is designed for resequencing Tracks by dragging and dropping as discussed in section 4.8.4.3 below.

4.8.4.2 Total Duration

This field shows the total playing time of the CD. The total playing time includes all pauses between the individual tracks as well as the "pregap" mode changing pause before the start of Track 1. The inclusion of pregap results in a different duration than would result from simply adding the disc running times, and complies with the method CD players use to calculate and display Total Duration as specified by the CD-DA Red Book.

4.8.4.3 Track Listing

This field shows a list of all Tracks present. For Start of Track marks, each entry shows the track number and name, the start and end times along with the duration. If the Extended Listing check box, mentioned in section 4.8.4.1 above, is checked, then End of Track and Indexes are also listed along with their times.

Any individual mark can be selected by clicking on that row in the list. A selected Track is highlighted in yellow while information on the highlighted mark will appear in the fields above within the Track Info section. See section 4.8.2 above for more information on Track Info.

If you double click on a Track Start entry in the list, PreMaster CD will automatically begin playing that Track based on the current timings. This provides a quick way to confirm your mark locations.

The Track Listing also provides the ability to resequence CD Tracks. If you click–hold on any (Start of) Track entry, and drag it to a new location in the list, you can drop it and the audio implicit in the Track definition will also shuffle to the new location. This allows you to quickly resequence CD Tracks. See section 4.3 for a more general discussion of auto–snapping, including resequencing.

4.8.4.4 PQ Validator

PreMaster CD validates your PQ entries against the Red Book specifications. If they meet the requirements, the indicator at the lower left corner will be green and the status field will show "PQ Information is valid." If the PQ marks violate the Red Book requirements, the button will be yellow, and a message will appear describing what is wrong with the entered parameters.

Note that you may see a "Sound begins more than 2 frames before Start Mark" message. This a reminder to check that you are not unintentionally truncating any audio at the head of your Project. Remember that, according to the Red Book specification for CD-DA discs, the first 2 seconds or 150 CD frames are "pregap," and the first track start is at 2 seconds. Any audio

before the 2 second mark will be replaced by 150 CD frames of digital zeroes on any CDs delivered and in DDP file sets. Pregap is a logical region of the disc reserved for mode changes and other non–audio functions.

4.8.5 PQ Delivery Tab

The second of the two tabs in the Mark Info window is the PQ Delivery tab. This pane controls the delivery speed and destination, as well as other options like CD Text.

Figure 4.17: The PQ Delivery tab of the Mark Info window

4.8.5.1 Destination Device Selection & Status

The Device field provides details about your CD-R mechanism. When multiple CD-R mechanisms are connected, there is a selector, represented as a white disclosure triangle, to the right of the Device label. This selector allows you to toggle between the available target mechanisms. PreMaster CD can only address one mechanism at a time. The Status field below the

device field provides an indication of the status of your delivery media and progress of the delivery:

Note that PreMaster CD is designed to address Apple–supplied, built–in CD-R and DVD-R mechanisms as well as most third party, FireWire–attached drives supported by the operating system. USB–attached products as well as some third party drives do not function with Apple's optical disc frameworks so, always test new mechanisms prior to use.

4.8.5.2 Delivery Options

In this section of the PQ Delivery tab, there are three buttons, a speed menu and three check boxes that control various aspects of your delivery. First, there is a Speed menu that lets you select the "burn" or writing speed. Though most commodity media is optimized for high speed writing, this is not optimal for audio disc creation. High write speeds usually produce lowers detectable error rates but jitter performance is degraded. Since, in a player, detectable errors are corrected, they are not an issue. However, jitter performance affect the subjective quality of disc playback. Lower write speeds produces less jitter so, always write at the lowest speed available for your mechanism and use blank media optimzed for low speed audio disc creation.

To the right of the Speed menu are three check boxes for miscellaneous options. The CD Text check box enables that option for CD-R delivery only. CD Text will not be included in DDP file sets or Jam images.

The Close Session check box controls whether is the CD-R is a TAO (Track at Once) or a DAO (Disc at Once) disc. It is possible to create multi-session, Track At Once discs in PreMaster CD but, this is not recommended as TAO disc are not universally interoperable. That is, they will not play in all CD players. Again, unless you have a very good reason, you should leave Close Session check box selected.

With a Track At Once disc, the disc's TOC or Table of Contents is left "open" and a temporary TOC stand-in, the Program Memory Area, is used until the TOC is "closed" and the disc is no longer writable.

The Emulation Mode check box allows you to test a CD-R delivery without actually writing a disc. This reduces the number of "coasters" you generate.

4.8.5.3 The Execute Button

Once the above options are to your liking, this button starts a new delivery, writing to the location shown in the "Device" field. When you click the Execute button, a standard Mac OS file browser opens where appropriate, allowing you to specify the target location for a DDP file set. A new or empty folder should be specified to contain the newly created file set that will form the basis for your CD-R delivery. Once the destination is specified, PreMaster CD begins the delivery process, with progress shown in the validation field at the bottom of the PQ Delivery window. During delivery to a CD-R when no media is present in the selected drive, PreMaster CD will prompt you to insert media and wait for a blank disc to be inserted.

Note that, once a delivery has started, the Execute button changes to an Abort button, allowing you to halt the delivery process. Aborting a delivery in the midst of the delivery process will render the resulting disc or DDP file set unusable.

When you insert a blank CD-R into your target drive, you may see a dialog asking, "You inserted a blank CD. Choose an action…". Clicking on the Ignore button will close this dialog and release the mechanism for PreMaster CD's use. This behavior results from the settings in the CDs & DVDs pane of the Mac OS System Preferences. You may want to set your CDs & DVDs preferences to Ignore so as to eliminate that extra step.

As a alternative to the Execute button, the Burn button is a quick route to creating a CD-R. A functional equivalent to the Mark Info's Execute button, simply click on the Burn button to start a DDP and CD-R delivery.

4.8.5.4 Delivering CDs from an Existing DDP

Once you have an existing DDP file set, it's easy to deliver one or more, identical CDs from that DDP file set. Open a new, empty Project before "reusing" an existing DDP file set. *Then,* click on Execute and, in the resulting dialog, click on the "Use" button after specifying delivery to a folder that already contains a DDP file set. This will re–use the existing file set, "burning" another CD.

4.8.5.5 The Eject Button

The Eject button will cause the host to eject an inserted disc.

4.8.5.6 The PQ and Other List Buttons

There are three buttons that generate textual list in PreMaster CD. One is the Track List button, which is generally not used though, because of its simplified content, can be used to deliver CD Text metadata to replication in place of the more detailed PQ List discussed below.

The Export List button is included for completeness. It is usually used for cue spotting in motion picture work.

The third button generates a PQ List, the industry standard text representation of the current Project's content from a PQ perspective. Once TextEdit opens the file, you should review the contents and add or edit the information to include any CD Text information you want to appear on your replicated CD. The completed file is typically printed, the hard copy is sent, along with the file and appropriate DDP data set saved to your blank medium of choice, to the replicator.

5.1 Meters Window

The "Meters window" provides a Master section, the final output control for your Project. The Master section window can be opened by selecting the Windows > Meters command.

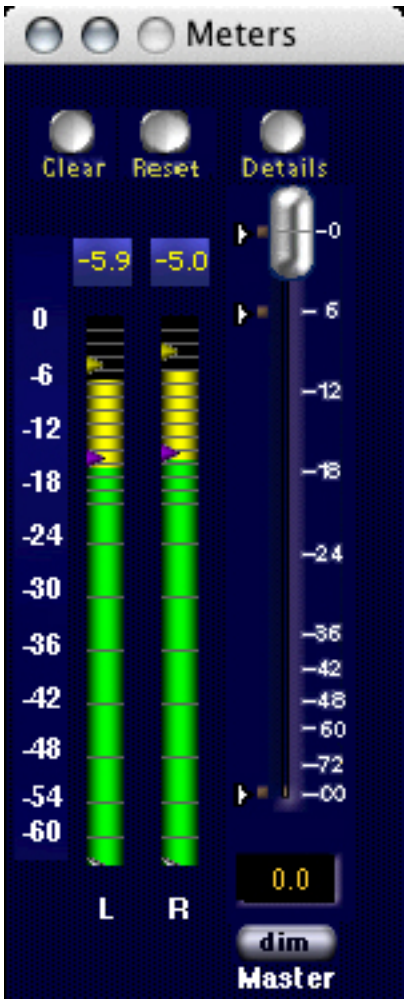

Figure 5.1: The Master section

The Master section resembles a master fader section of a typical mixing desk and features a number of elements. Most important, at right, is a Master fader.

The Master Fader controls output amplitude across all four buses. It has a amplitude scale at right, with three triangular hot spots, at left, for rapid gain setting. Clicking on a hot spots instantly moves the fader to the corresponding preset position. Hot spot values are not adjustable.

Below the fader is a gain call out field where the gain setting of the fader can be manually entered as a numerical value. To alter the master fader's position, a new value can be manually entered in this field and, after confirming the new value with the Enter key, the fader will move to the corresponding position.

Also, at the bottom a "dim" button is found. Clicking the dim button immediately moves the fader to the predefined position of -20 dB, returning to it's original position when the dim button is disengaged. When the dim button is engaged, it's label color changes to red to indicate that dim mode is active.

To the left of the Master fader is a section from which the window gets its name, the bus meters. Above each meter is a field showing the numerical value of the current instantaneous amplitude. When an overload occurs, these boxes turn red. To clear the overload display, click on the indicator and the red surround will disappear.

Finally, at the top left of the Master section are four more buttons. Clicking the Clear button clears the peak values for the numerical level indicators, as well as any overloads indicated. Clicking Reset resets the peak-hold of the meters, as well as any peak-hold value in the Meters Details window.

The third button, Details, opens or closes the "Meter Details" window.

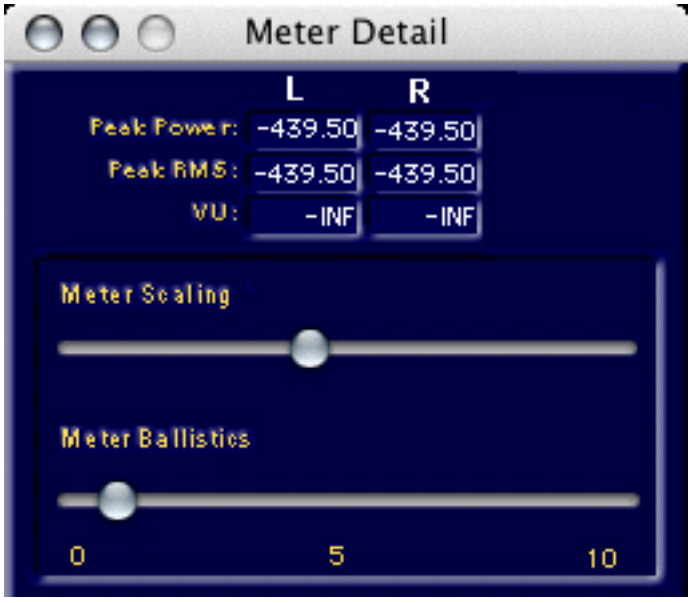

Figure 5.2: The Meter Details window

The six value indicators show the current instantaneous values for Peak Power, Peak RMS and VU (Volume Indicator scaling) for each output. With the Meter Scaling slider, the scaling of the meters can be adjusted to provide more resolution at increasingly higher amplitudes.

Chapter 6..... Menus

For all menus, the keyboard equivalents for all commands are listed in Appendix 1. Also note that the word folder is used to describe disk directories, in keeping with Mac OS tradition. Finally, all edits in PreMaster CD are both instantaneous and non–destructive. The only exception is the File > Save Reversed command, which "renders" or creates a new sound file of the reversed material.

6.1 The File Menu

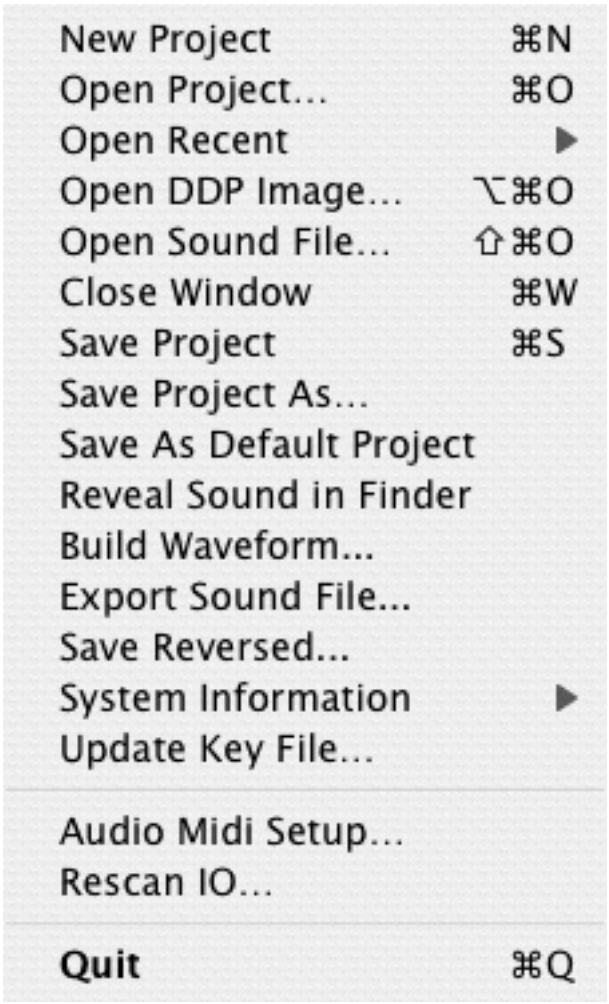

Figure 6.1: The File menu

6.1.1 New Project

Selecting New Project from the File menu will open a new, empty Project. Any currently active Projects are unaffected but moved to the background. PreMaster CD allows you to have as many open Projects but, when the application runs out of RAM, it will begin to use virtual memory, significantly slowing down the application.

6.1.2 Open Project

A Project file lets you save your editing work in a set of files, along with most of the editing metadata you added. An additional feature of a Project is that you can save your edit decisions without committing them back to a DDP file set. The Project file saves all segment names, SRPs, marks and edits and, they are all restored upon re–opening that Project.

Selecting File > Open Project brings up a standard Mac OS file browser. Locate the requested Project file and select it to open the Project in a new window.

6.1.3 Open Recent

With this menu, a list of recently opened Projects and sound files is shown. Selecting one of those files will re-open it.

If you hold down the option key prior to accessing this menu command, it divides the resulting list into Project files first and sound files second, with a divider in between. The files appear in the list with the most recently used files at the top, in the order they were opened.

Finally, if you select a sound file from this menu without any target Projects open, PreMaster CD will create a new (default) Project and open the sound file into that Project.

6.1.4 Open DDP Image...

In addition to sound files, PreMaster CD can optionally open DDP file sets with the DDP File Open option. Selecting “Open DDP Image…” from this menu invokes a standard Mac OS browser. To open a DDP file set, select its containing folder and choose “Open” from the browser window. PreMaster CD will open the IMAGE.DAT audio file and metadata into a new Project.

The DDP metadata consists of three files, the DDPID, DDPMS and the DDPPQ or SD files. PreMaster CD parses or reads, then validates these files and adds PQ Marks when the DDP file set is opened.

PreMaster CD can open both consolidated and split DDP file sets. These labels refer to the audio files, with a consolidated file set employing a single audio file while the split file sets has two or more audio files. The consolidated type is far more common and that is the type that PreMaster CD saves.

If you do not own the DDP File Open option, you can still open the IMAGE.DAT portion of a DDP file set. Simply drag and drop an IMAGE.DAT file onto the top Panel of a Project. It will open the file, allowing you to play back only the audio portion of a DDP file set, which is useful for quality control.

Note that, if you enter CD Text metadata in the Mark Info window, PreMaster CD creates an additional file, the Afile, in the DDP file set. This file *is not used by replicators* for the addition of CD Text on glass masters for replication. It is only used by PreMaster CD to add CD Text to CD-Rs created by PreMaster CD. The CDText.bin is created for the DDP Image file set. For more information on delivering CD Text to replication, see section A1.5 below.

6.1.5 Open Sound File...

This command opens a Mac OS file browser, allowing you to select any sound file recognized by PreMaster CD. This includes AIFF, WAV and BWF files along with SD2 or Sound Designer II files with region definitions. See section 6.9.4.4 for more information on importing SD2 files. PreMaster CD is also able to open audio files by dragging and dropping the files into the top Panel of a Project.

6.1.6 Close Window

This command closes the currently active window. This can be a Project, the Mark Info window or, the Preferences window. Upon closing a Project that contains unsaved changes, PreMaster CD will open a dialog asking for changes to be saved, discarded or offering to cancel the close window operation.

6.1.7 Save Project

This will save the current state of the active Project. It is saved with its current name and path. This command will overwrite any previously saved Project file with that name and path.

6.1.8 Save Project As...

This command lets you save a copy of the active Project under a new file name or different path. PreMaster CD allows you to choose either a destination folder or, you can navigate to an existing folder. If the destination is empty, PreMaster CD simply writes the audio and/or meta-data files as directed. If, however, the destination folder is not empty, PreMaster CD alerts you that a potential conflict exists to overwrite files and asks for more direction.

6.1.9 Save As Default Project

This command save the foreground Project as the default document layout when new Projects are created. Since this is a literal "save as," you should always deploy an empty Project, without any sound files opened into the Project, before you invoke this command.

6.1.10 Reveal Sound In Finder

This command requires a single selected segment. As the name implies, Reveal Sound In Finder switches context to the Finder and opens a new window with the source sound file highlighted.

6.1.11 Build Waveform...

Files originating from a non–Sonic Studio product includes sample values but do not contain the amplitude-specific metadata needed to draw our very detailed audio time versus amplitude "waveforms." If you would like to add waveforms while working with your sound files and have unchecked the default Windows > Preferences > EDL > View > Background Waveforms preference, you must select the Build Sound Waveform… command.

First, select the parent sound file by clicking on the segment's Title Bar. The Title Bar will turn yellow to show that it is selected. Then, select the File > Build Sound Waveform… command.

6.1.12 Export Sound File...

This command exports sound files in either AIFF or BWF format, in 16 or 24 bit word length. It exports the audio with amplitude changes from segment gain, plus any Gain Overlay or plug–ins.

To use this function, first click–drag in the top Panel to create a selected region and make sure the top two Panels are assigned, on the first two Desk strips, to Mix1 and Mix2. Then choose the destination directory with the Set file button. Finally, set the file type, word length and speed, then click the Export button. PreMaster CD will "play" the selected region, exporting the audio as it plays.

Note that playing material at 1x speed will not improve the quality during an export so, it is recommended that, unless real–time playback is needed, you use the Max speed setting as it has better temporal resolution. Also, during high speed exports, the time display and Playhead do not operate in real time.

6.1.13 Save Reversed...

This command saves one or more selected segments or regions in reversed time order, creating a new sound file and segment that "plays backwards." After invoking the command, a Mac OS file browser appears in order to select the location and file name of the new reversed file to be created. After the operation is complete, the reversed material will be edited back into the Project, replacing the original segment(s) or region(s).

Note that this operation may take a lot of time, depending upon your system configuration and the length of the selected file(s) or region, during which time PreMaster CD may appear to be inactive.

6.1.13 System Information

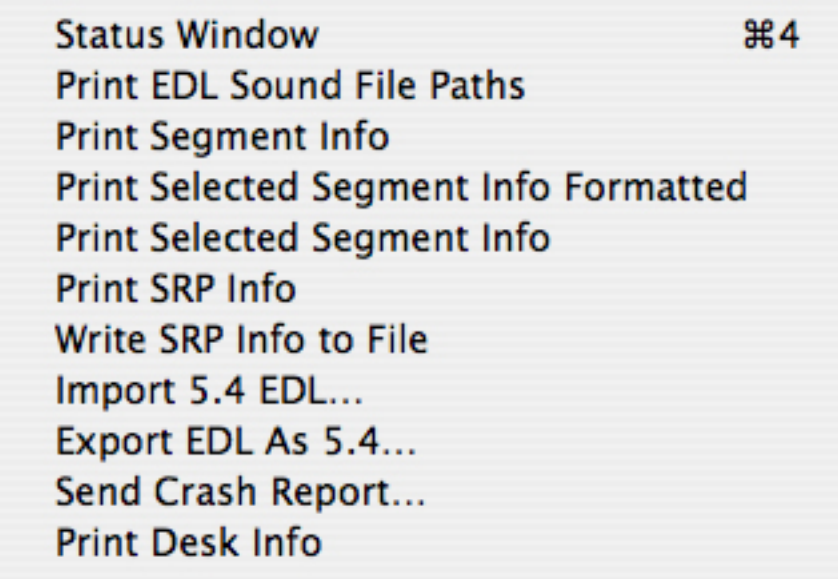

Figure 6.2: The File > System Information submenu

6.1.13.1 Show Console Log

Invoking this command launches the Console utility and opens the log associated with PreMaster CD. Console is the central repository for reports from running processes and applications. While PreMaster CD is running, it outputs information to Console and that information, such as details on installed options, system status and actions undertaken, then appears in the log. Also, at the command of the user, certain information regarding EDL or Projects can be output to the log as well. See the following sections for more information on user selectable printing to the log file.

6.1.13.2 Print EDL Sound File Paths

This commands outputs a list of all locations of all sound files in use in the current Project. The output is written into the Console Log.

This command is useful if you work in a facility with multiple drives or network–attached storage on which some of your material resides. Printing the explicit path allows you to keep track of the location of all source material, for both documentation and backup.

6.1.13.3 Print Segment Info

This command prints highly detailed information on all segments in the current EDL. The output is written to the Console Log.

6.1.13.4 Print Selected Segment Info Formatted

This command prints user information on the currently selected segment(s). The output is written to the Console Log in the form of a table showing the file name, start and end time, duration and gain in dB.

6.1.13.5 Print Selected Segment Info

This command prints highly detailed information on all selected segments in the current EDL. The output is written to the Console Log.

6.1.13.6 Print SRP Info

This command prints detailed information on all SRPs in the active Panel. The output is written into the Console Log.

6.1.13.7 Write SRP Info to File

This command prints detailed information on all SRPs in the active Panel to a new file. The output is formatted in a table with details on track location, ordinal number, lock status and type, as well as any textual label added to the SRPs. Lock status is indicated by an "L" for locked and a "U" for unlocked. Standard SRPs have a "C" type indication while Sync SRPs, used on other Sonic Studio products, show an "S" type.

Note that, though the default name of the file created with this command has a ".srp" suffix, you should manually remove that suffix and replace it with a ".txt" file extension.

6.1.13.8 Import 5.4 EDL...

For backwards compatibility with legacy Sonic Solutions 5.4 DAWs, PreMaster CD can import EDLs created with version 5.4 of that software. To import a 5.4 EDL, first a new Project has to be created by choosing File > New Project from the main menu. Then, select "Import 5.4 EDL" and a standard Mac OS browser will appear. Navigate to the location where the 5.4 EDL is stored, select it and open it by clicking "Open" in the browser window.

6.1.13.9 Export EDL As 5.4...

For compatibility with legacy Sonic Solutions 5.4 DAWs, PreMaster CD can export Projects in 5.4 EDL format. To import the current Project to a 5.4 EDL, select this option and a standard Mac OS file save window will appear. Browse to the location where the 5.4 EDL must be stored and enter the desired name for the 5.4 EDL. Select "Save" to save the Project as a 5.4 EDL.

Note that, as Sonic System 5.4 will only run on original Mac OS 9–based hard and software, you must observe OS 9 file naming conventions.

6.1.13.10 Send Crash Report…

This command is designed to help Sonic Studio to diagnose problem you may be experiencing with your installation. It collects the most recent crash report for PreMaster CD and sends it via your internet connection to Sonic Studio.

6.1.13.11 Print Desk Info

This command outputs all Desk and Output Desk settings to the Console Log.

6.1.14 Audio MIDI Setup...

This command opens the Audio MIDI Setup utility from within PreMaster CD, allowing you to configure your clock source and sample rate.

6.1.15 Rescan IO...

PreMaster CD's sample rate reflects the settings in Audio MIDI Setup at the instant you open the application. However, the sample rate may not dynamically update if anything in Audio MIDI Setup is changed. To make sure the sample rate accurately reflects the current setting of Audio MIDI Setup, select the "Re-Scan I/O" command. This updates the PreMaster CD's I/O settings, re-loading the current settings from Audio MIDI Setup.

6.1.16 Quit

Selecting Quit from the File menu begins the process of closing the application. Any open Projects that have been modified will produce a modal dialog asking you to determine open Project's fate. See section 6.1.6 above for more information on this dialog.

6.2 The Edit Menu

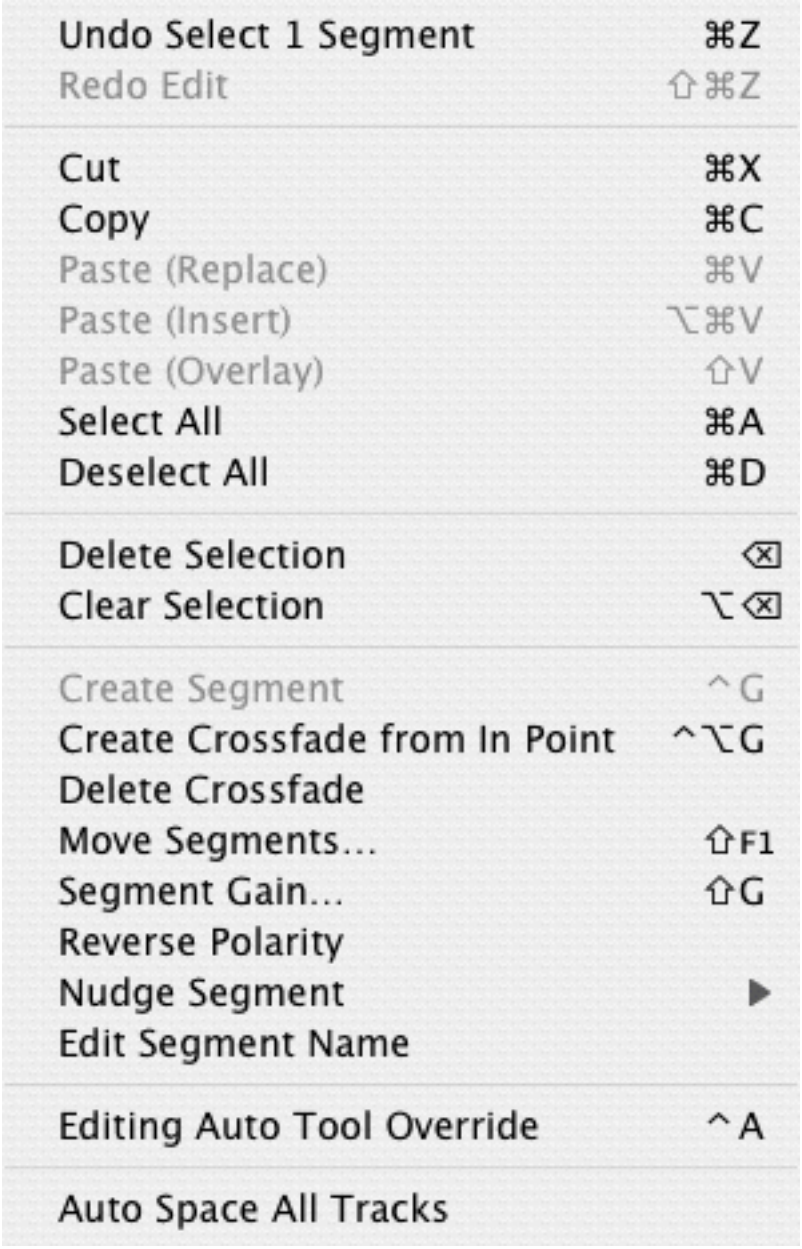

Figure 6.3: The Edit menu

6.2.1 Undo (action)

This command reverts the last command executed. For clarification, the Undo command also appends the last action performed to the menu name.

PreMaster CD provide an almost unlimited number of undos. The only limiting factor is the amount of RAM which, when completely used, will force the operating system to use virtual memory. This will slow down the operation of PreMaster CD.

Note that some individual commands actually perform several functions "behind the scenes" though to you, the user, it appears to be only one function. For that reason, you may have to Undo several times to recover a state that was reached with a single user command.

6.2.2 Redo (action)

This command reverts the last undo command, reinstating the last command performed. Additionally, for clarification the Undo command in this menu shows the last action undone.

6.2.3 Cut

The Cut command operates on a region within Edit Points as well as selected regions or segments, removing the defined item from the Project and placing it in PreMaster CD's "Clipboard." The Clipboard is a temporary memory location reserved by the operating system for each running application.

6.2.4 Copy

The Copy command operates on a region within Edit Points as well as selected regions or segments, copying the defined item from the Project and placing it in PreMaster CD's Clipboard. Unlike the Cut command, the Copy command leaves the defined item intact instead of deleting it after copying the selection to the Clipboard.

6.2.5 Paste (Replace / Insert / Overlay)

The Paste command inserts the content of the Clipboard into the Project, replacing, in order of choice, either:

1. A region within Edit Points
2. Selected regions or segments
3. From the Edit Point position

...for the duration of the audio currently of the Clipboard. The inserted content is placed between Crossfades and the Edit Point is moved, for visual reference, to the end of the inserted material.

6.2.6 Select/Deselect All

These commands select or deselect all segments or regions in the current Project.

6.2.7 Delete Selection

If a region or segment is selected, this command will delete the defined item. It will then "slip" or move left any audio after the deleted region or segment, filling in the space formerly occupied by the selected segment or region. A Crossfade is placed to transition across the deletion.

Note that, as with all editing in PreMaster CD, if both an In and Out Point are present, and the Out point is after the In Point, then they take precedents over both selected region and segments.

If only an In Point is present, then the command will not work. Finally, if both an In and Out Point are present, the Out point is after the In Point, and the edit points are inside "Edited Black," the empty area between segments, then that region defined by the edit points will be deleted and "downstream" audio will be moved left.

6.2.8 Clear Selection

Clear Selection works similarly to the Delete Selection command. The Clear Selection command clears the selected segment, region or area defined by Edit Points, but does not move any other audio on the time line.

6.2.9 Delete Selection

This command deletes the current selection or selected segments. The outer edges of the selection are joined with a default crossfade and all subsequent audio is shifted relatively.

6.2.10 Clear Selection

This command clears the current selection or selected segments, leaving all audio in place and replacing the audio to be cleared with digital silence. The edges of the cleared area are faded out and in with default crossfades.

6.2.11 Create Crossfade/Create Segment

This command is context sensitive and it's appearance in the menu will change according to the current Panel's state. It either creates a new crossfade from the current Cursor's position when no selection is made, or it creates a new segment at the place of the selection when a selection is made. This command uses crossfade defaults when creating crossfades.

6.2.12 Create Crossfade from In Point/Create Segment from In & Out Point(s)

As with the previous commands, this command is context sensitive and it's appearance in the menu will change according to the current Panel's state. It either creates a new crossfade from the current In Points position when no Out Point is seen, or it creates a new segment at the area included by a set In and Out Point. This command uses crossfade defaults when creating crossfades.

6.2.13 Delete Crossfade

The Delete Crossfade command deletes all "frivolous" Crossfades, ones that cause no audible change in the underlying audio, from the selected region. Superfluous Crossfades are usually

created with the Create Crossfade command, discussed in the previous section and, after an extensive editing session, the Delete Crossfade command will clear any visual clutter, making it easier to see the operative edits.

6.2.14 Move Segments...

The Move Segment command allows the user to move one or more segments to another location on the time line. Selecting this command opens the Move Segments modal dialog, which shows the current position of the Playhead or start of the first selected segment.

Entering a new start time and clicking the Move button causes the head of the first selected segment to move to the new location. All selected segments will also more by the same amount, maintaining their relative position to each other.

Additionally, this dialog offers three extra options. By clicking the Where button, you can load either the current position of the Playhead or the location of extant In point or Out Points, all from a drop down menu. Then, by clicking the Move button, the segment(s) shift to the new location. The SRP button lets you load the current position of any extant SRPs, also from a drop down menu.

The Move button moves the defined item to the location shown in the dialog's time code address. Clicking the Cancel button leaves the selected segments at their original position.

6.2.15 Segment Gain...

This command invokes the Segment Gain dialog. For more detailed information on the Segment Gain dialog, See .

6.2.16 Reverse Polarity

The Reverse Polarity command inverts the polarity of the selected segment(s) in all selected Panels. Segments with inverted polarity acquire a small, bright red dot in the upper left corner of their Title Bar to visually remind you of their inverted status.

Note that, to change the polarity relationship between a stereo pair, this command must be applied to only one channel of the pair. To do this, change the Edit Group Selector of one Panel, located on the left edge of both Panels, from the default stereo setting to mono. To read more about Edit Group Selectors, refer to section 4.7 for more information.

6.2.17 Nudge Segment Left/Right

The Nudge Segment commands move or "nudge" the selected segment(s) left or right, earlier or later respectively, on the time line by a predefined value. The default "Nudge B" value used is defined in the Time Display tab of Preferences window. See section 6.9.5 for more information on the Time Display preferences.

6.2.18 Edit Segment Name

When a segment is selected, choosing the Edit Segment Name command allows the user to edit the name of the segment as it appears in the Title Bar, and in Text Mode view. As with all actions in a Project, changing the Segment name has no effect on the underlying referenced sound file. This command is equivalent to double clicking on the Title Bar to change a segment's name.

6.2.19 Editing Auto Tool Override

This commands toggles the Editing Auto Tools state, either enabled or disabled. See section 6.9.6 for more information on the EDL preferences.

6.2.20 Auto Space All Segments/Tracks

The AutoSpace function offers a simple but effective tool to change all pauses between tracks to a pre-defined value. Simply select Edit > AutoSpace all Segments and all segments will be moved on the time line, with equal space between according to the Preference > Editing Tools > AutoSpacing Duration setting.

If you have PQ marks already placed in the Project, the command name changes contextually from Auto Space All Segments to Auto Space All Tracks. See sections 3.8.6 and 4.2.1 above for practical discussions about the autospacing function.

6.3 The EDL Menu

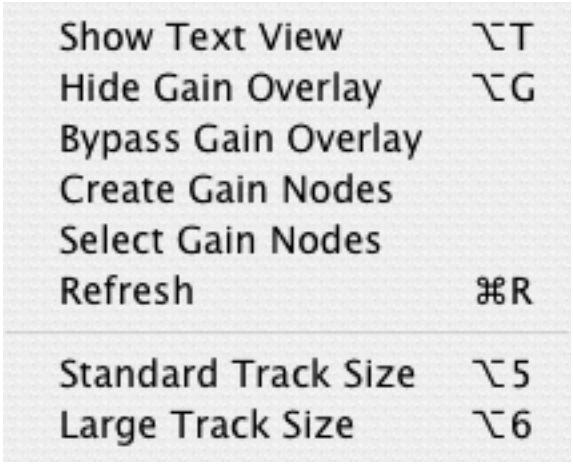

Figure 6.4: The EDL menu

6.3.1 Show/Hide Text View

The Show/Hide Text View command toggles the display of the selected Panel between Text Mode and Waveform Mode views.

6.3.2 Show/Hide Gain Overlay

This command forces the selected Panel to show or hide the Gain Overlay feature. The Gain Overlay is only visible in Waveform Mode, and is shown as a thin red line superimposed on the waveform display. Projects saved with Gain Overlay will open with Gain Overlay visible upon reopening.

Note that, although Gain Overlay may not be visible, when activated it is always active in the audio output signal path. Only the EDL > Bypass Gain Overlay command will bypass any Gain Overlay functionality. See section 6.3.3 below for more information on the Bypass Gain Overlay command.

6.3.3 Bypass/Enable Gain Overlay

This command bypasses or engages the Gain Overlay function. When in bypass, the Gain Overlay line in the waveform display turns grey and the corresponding Gain Overlay Button(s) on the left side of each Panel turn yellow.

Note that the Bypass/Enable Gain Overlay function can only be selected when Gain Overlay is shown. Option–clicking on a Gain Overlay Button will also bypass the Gain Overlay function.

6.3.4 Create Gain Nodes

With Gain Overlay enabled and a region of the time line selected, this command creates Gain Overlay nodes at the boundaries of the region. To use this function, first click–drag within the waveform display to select a region. Then, select Edit > Create Gain Nodes to add two nodes at the "edges" of the Gain Overlay and the selected region.

Because the Edit Point is really a zero duration selection, it can also be used to create a single gain node with the Create Gain Nodes command. For more detailed information on working with the Gain Overlay, see section 4.5 above.

6.3.5 Select Gain Nodes

This command selects all Gain Nodes contained within the currently selected segment(s) or region. Selected Gain Nodes can then be subject to simultaneous changes such as gain setting, lock state, or deletion.

For more information on working with Gain Overlay mode, see section 4.5 above.

6.3.6 Refresh

The Refresh command redraws the current waveform display for the selected Panel. This command is especially useful after rebuilding the waveform files of one or more segments, to force the waveform display to display the updated information.

6.3.7 Standard/Large Track Size

The Standard and Large Track Size commands resize the selected Panel(s) to standard or large vertical size. Large sized Panels are two times as tall as standard size, offering a better display with larger display or desktop settings. A Large Panel also lists more segments in Text Mode.

6.4 The Play Menu

Figure 6.5: The Play menu

6.4.1 Play From Selection

This command starts playback from the beginning of a selected region. If no region is selected, then playback starts at the Edit Point. If the Edit Point is not available, playback commences at the start of the first segment in the Project. This command is equivalent to tapping the Space-bar on the keyboard. The Play From Selection command will continue to play until either the Spacebar is hit again or the Playhead reaches "midnight" (23:59:59:74).

6.4.2 (Play) Selection

This command plays a selected region or segments. Whereas the Play From Selection command mentioned in section 6.4.1 above will continue to play until stopped, the play Selection command stops automatically at the end of the selection.

6.4.3 (Play) From Playhead

In normal operation, when you tap the Spacebar to start playback, the Playhead will jump to the Edit Point or, the start of the file if there is no Edit Point, and begin playback. The Play From Playhead command emulates a tape transport, with playback instead starting at the current Playhead location.

6.4.4 Repeat Play

If there is a selected region, the Repeat Play command will repeatedly play the region until stopped. If there is not a selected region, PreMaster CD will repeatedly play the entire Panel. Repeat playback continues until you stop play with the menu command or by hitting the Spacebar.

6.4.5 Stop All

This command stops playback and/or recording and is equivalent to tapping the Spacebar during playback or clicking on the Stop button in the Transport Bar.

6.4.6 Around Selection Center

This command plays a section of sound centered around a selected region. When you choose Play Around Selection Center, a submenu appears, allowing you to select the length of playback time.

Figure 6.6: Play Around Selection Center submenu

6.4.7 Play from Selection

Like the Play Around Selection Center discussed in section 6.4.6 above, this command requires that you first select a region. Also, this command offers a submenu with duration choices for playback. Unlike Play Around Selection Center, this command begins playback at the left edge of the selection and continues, for the specified duration.

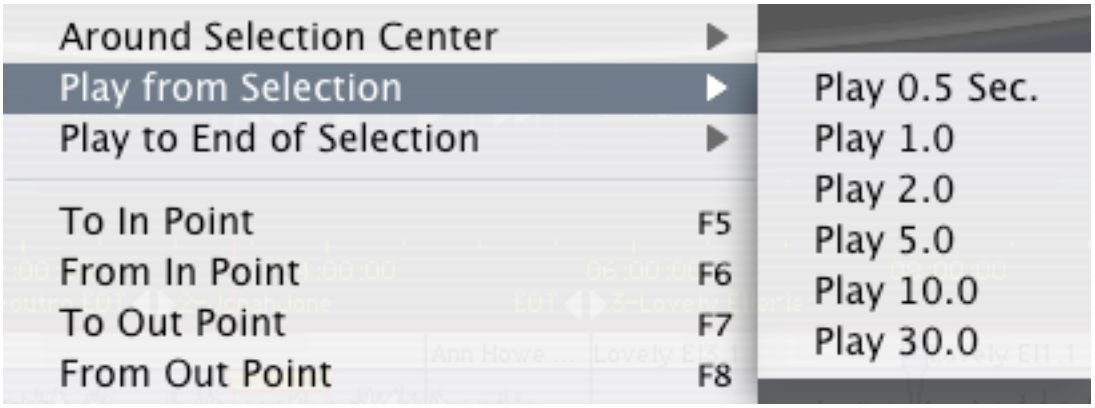

Figure 6.7: Play from Selection

6.4.8 Play to End of Selection

This command is the opposite of the Play from Selection command discussed in section 6.4.7 above, except that playback ends at the trailing edge or right side of a selected region. If there is not a selected region, playback ends at the Edit Point. This command also offers a submenu with a number of choices for the duration of the playback.

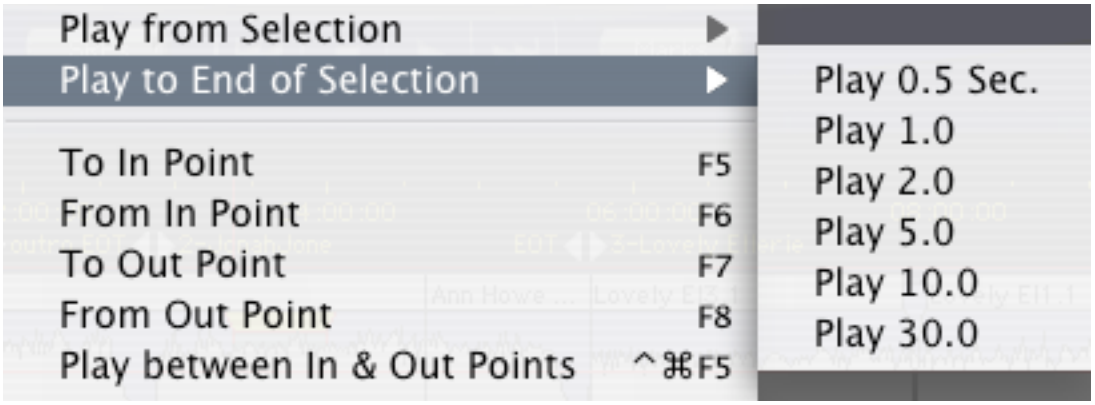

Figure 6.8: Play to End of Selection submenu

6.4.9 To In Point

This command plays a section of sound up to the In Point. The duration of playback is preset by the Play Around In Point preference. See section 6.9.5 below for more information on the Time Display preferences.

6.4.10 From In Point

This command plays a section of sound starting at the In Point. The duration of playback is preset by the Play Around In Point preference. See section 6.9.5 below for more information on the Time Display preferences.

6.4.11 To Out Point

This command plays a section of sound up to the Out Point. The duration of playback is preset by the Play Around Out Point preference. See section 6.9.5 below for more information on the Time Display preferences.

6.4.12 From Out Point

This command plays a section of sound starting at the Out Point. The duration of playback is preset by the Play Around Out Point preference. See section 6.9.5 below for more information on the Time Display preferences.

6.4.13 Play Between In and Out Points

This command starts playback at the In Point and continues to the Out Point.

6.4.14 Move Playhead

This command lets you place the Playhead at a specific location on the time line. When you select this menu item, the Move Playhead modal dialog appears.

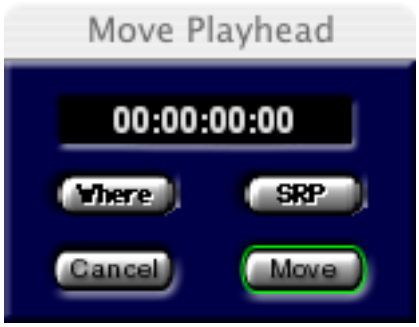

Figure 6.9: The Move Playhead dialog

When you enter a new time code address in the Move Playhead dialog and click Move, the Playhead will jump to the new location. Besides manually entering a new location, you can also use the Where button to load the address of the In or Out Point, if present, while the SRP button loads the locations of any existing SRPs. Clicking the Cancel button leaves the Playhead at its original location.

Note that, when the Playhead is visible by disabling the Play > Hide Playhead When Stopped toggle, you can hover the cursor over the Playhead's location, either in the time line or Panels, the cursor changes shape to a sine wave–with–vertical line. Once in that mode, you can click–drag the Playhead to a new location.

6.4.15 Hide Playhead When Stopped

This command is somewhat of a misnomer in that it toggles, on or off, the ability to drag the Playhead to a new location when stopped. A check mark appears next to this menu item when this function is disabled.

This command applies to relocating the Playhead in either a Panel or on the time line, and is useful if you find yourself grabbing the Playhead accidentally while attempting to edit or modify some other object in a Project. Even with this command enabled (checked), you can always double click in the time line to relocate the Playhead and begin playback at that location.

6.5 The Mark Menu

Figure 6.10: The Mark menu

6.5.1 Mark Info

The Mark Info command opens the Mark Info window. This command is equivalent to the Windows > Mark Info command. See section 3.9 for more information on the Mark Info window.

6.5.2 Track Start Mark

The Track Start Mark command inserts a Start of Track PQ mark at the location of the Edit Point.

6.5.3 Track End Mark

The Track End Mark command inserts an End of Track PQ mark at the location of the Edit Point.

6.5.4 Index Mark

The Index Mark command inserts an Index PQ mark at the location of the Edit Point.

6.5.5 Delete Mark

The Delete Mark command is used to remove existing PQ marks. If a region is selected in a Panel, all of the PQ marks inside the selection are deleted. If no region is selected, this command will remove a PQ mark if the Edit Point is at the exact time location of that mark.

6.5.6 Lock Marks from Selection

The Lock Marks from Selection command is used to lock PQ marks to the time line. This command locks all PQ marks inside a selected region. Once locked, mark locations cannot be modified until they are unlocked. This command is equivalent to clicking the Lock button, if disabled, in the PQ Info tab of the Windows > Mark Info window.

Note that this command does not affect the ability to change Title, emphasis state, ISRC or SCMS metadata associated with a mark. Also note that this command does not attach marks to audio segments. Editing any audio with locked PQ marks will change the time relationship between those marks and the associated audio.

6.5.7 Unlock Marks from Selection

The Unlock Marks from Selection command is used to unlock PQ marks within a selected region.

6.5.8 Lock All Marks

This command locks all PQ marks on the time line, regardless of selected regions or segments. Once locked, the location of PQ marks cannot be altered until they are unlocked.

6.5.9 Unlock All Marks

This command unlocks all PQ marks on the time line.

6.5.10 Analog Black to Marks

This function measures the amplitude and duration of the audio in a selected region, placing End of Track and Start of Track marks in locations that approximate the end of one track and beginning of the next. Both amplitude and duration are user defined. The default amplitude is set in the Editing Tools tab of the Windows > Preferences window.

When invoking this function, the Analog Black to Marks modal dialog appears. In the dialog, the default parameters can be changed, after which the Analog Black to Marks function is started by selecting OK. By clicking on the Cancel button, the operation is stopped without further action.

Note that the results of the Analog Black to Marks function is never as accurate as the Edited Black to Marks function, discussed in section 6.5.11 below. The accuracy of the mark placement depends entirely on the accuracy of the parameters used so, you may want to zoom in and, with the Show Track Scale in dB preference set (Editing Tools tab of the Windows > Preferences window), visually estimate amplitudes of your fade outs and noise floor. The result of the Analog Black to Marks function should always be checked for errors and unintended placement.

6.5.11 Edited Black to Marks

The Edited Black to Marks command automatically places Start of Track PQ marks at the beginning and end of all Fade Ins and Fade Outs respectively. To use the Edited Black to Marks command, you must first select either segments or a region. The presence of End of Track Marks makes it a bit less predictable when using the Track Bar for resequencing but, the presence of End of Track Marks means that there *will* be a countdown on the player's display when the resulting CD is played back.

6.5.12 Edited Black to Start Marks

The Edited Black to Start Marks command automatically places Start and End of Track PQ marks at the beginning and end of all Fade Ins and Fade Outs respectively. To use the Edited Black to Marks command, you must first select either segments or a region.

Because only Start of Track Marks are created, it makes it very easy to resequence using the Track Bar. On the other hand, the absence of End of Track Marks means that there will be *no countdown* on the CD player's display when the resulting disc is played back.

6.5.13 The Mark Contextual Menu

By control–clicking on a mark, a contextual menu appears. This menu provides choices similar to the Mark main menu, and allows you to modify the bahavior of a mark.

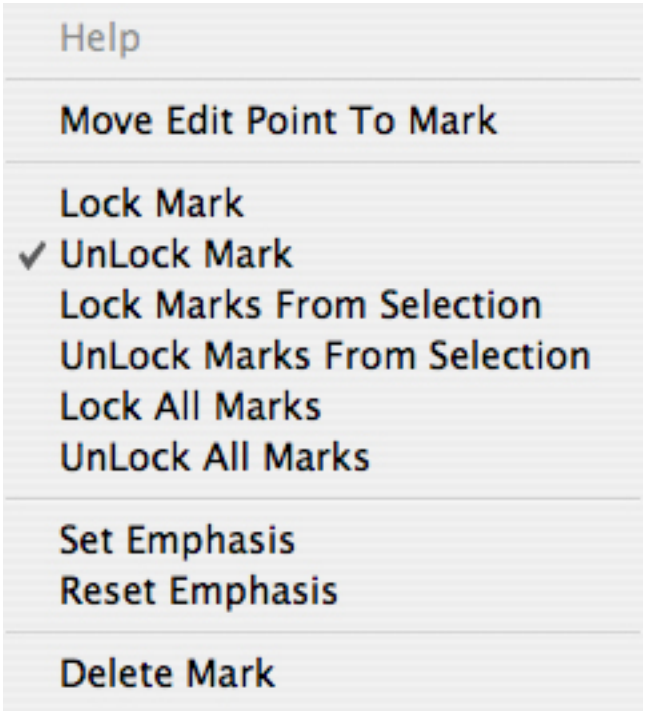

Figure 6.11: The Mark contextual menu

Move Edit Point To Mark: This command moves the Edit Point to the current Mark.

Lock/UnLock Mark commands: These commands are discussed above in this section.

Set/Reset Emphasis: Also available in the Mark Info window, these commands flip the state of the AES/EBU emphasis bit for the current mark.

Delete Mark: This command deletes the current mark.

6.6 The Selection Menu

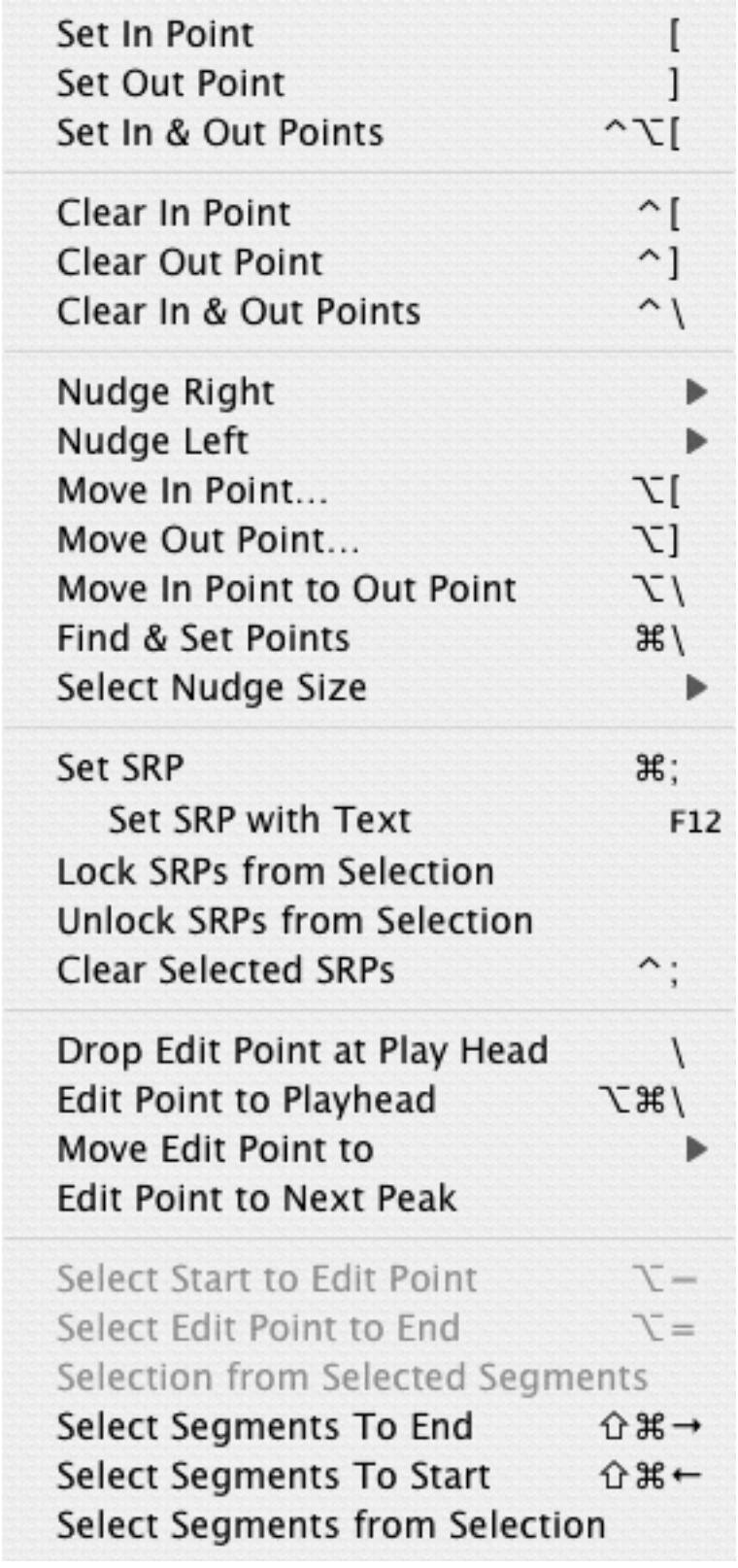

Figure 6.12: The Selection menu

6.6.1 Set In Point

The Set In Point command drops an In Point at the location of the Edit Point. There can only be one In Point in a Panel at any time.

Note that the IN, OUT and DUR time fields at the top right of the Project window are always active and fully editable. These fields allow you to precisely set the location of, and duration between, the In and Out Points.

6.6.2 Set Out Point

This command places an Out Point at the location of the Edit Point. There can only be one In Point in an EDL at any time.

6.6.3 Set In & Out Points

If there is a selected region in the Panel, then Set In & Out Points will create an In Point at the start of the selected region and an Out Point at the end.

6.6.4 Clear In Point

Clear In Point will, if present, remove the In Point.

6.6.5 Clear Out Point

Clear Out Point will, if present, remove the Out Point.

6.6.6 Clear In & Out Points

Clear In & Out Points will, if either is present, remove both the In Point and the Out Point from the Project.

6.6.7 Nudge Right/Left

These commands makes it easy to slightly move or "nudge" an In and/or Out Point to the right or left. When you select this command, a submenu comes up allowing you to advance or retard an In Point, an Out Point, or both simultaneously.

Figure 6.13: The Nudge Right command and submenu

The nudge amount is set in the Time Display tab of the Windows > Preferences window. See section 6.9.5 for more information on the Time Display preferences.

6.6.8 Move In Point/Out Point...

When you select either of these commands, this brings up the Edit In/Out Point modal dialog.

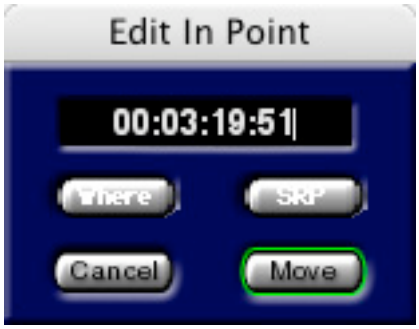

Figure 6.14: The Edit In Point dialog

When you enter a new time code address in the Edit In/Out Point dialog and click Move, the appropriate Edit Point will move to the new location. Besides manually entering a new location, you can also use the Where button to load the address of the Playhead or other Edit Point, if present. The SRP button loads the locations of any existing SRP while clicking the Cancel button leaves the Edit Point at its original location.

6.6.9 Move In Point to Out Point

This command forces the In Point to replace the Out Point.

6.6.10 Find & Set Points

This command places an In Point at the beginning and an Out Point at the end of a selected segment. More specifically, this command places Edit Points at the edit events for the black fades defining the boundaries of the segment(s). If multiple segments are selected, the In Point is placed at the beginning of the first selected segment, and the Out Point is placed at the end of the last selected segment.

Note that this command does not operate on selected regions. Also note that edit event locations can affect mark placement. See section 4.1.4 above for more information on edit events inside fades.

6.6.11 Select Nudge Size

This command allows you to select one of the three nudge presets used by the Selection > Nudge Right/Left and Edit > Nudge Segment commands. The presets are defined in the Time Display tab of the Windows > Preferences window. See section 6.9.5 for more information on the Time Display preferences.

6.6.12 Set SRP

This command places an SRP or Selection Reference Point in the selected Panel at the location of the Playhead or Edit Point, if play is stopped.

6.6.13 Set SRP with Text

When this alternate command is selected, the SRP is placed as in section 6.6.12 above except the text field that accompanies all SRPs is activated and the text insertion point is set, ready for typing in a label.

6.6.14 Lock SRPs from Selection

This command locks all SRPs within a selected region.

6.6.15 Unlock SRPs from Selection

This command unlocks all SRPs within a selected region.

6.6.16 Clear Selected SRPs

This command removes all SRPs within a selected region, whether they are locked or not.

6.6.17 Drop Edit Point at Playhead

This command moves the Edit Point to the current location of the Playhead and is typically used when the Edit Point to Playhead command, discussed in section 6.6.18 below, is disabled (unchecked).

6.6.18 Edit Point to Playhead

This command toggles a mode on or off whereby, when playback is stopped, the Edit Point jumps to the location of the Playhead.

6.6.19 Move Edit Point to...

This command has a submenu, with ten possible choices.

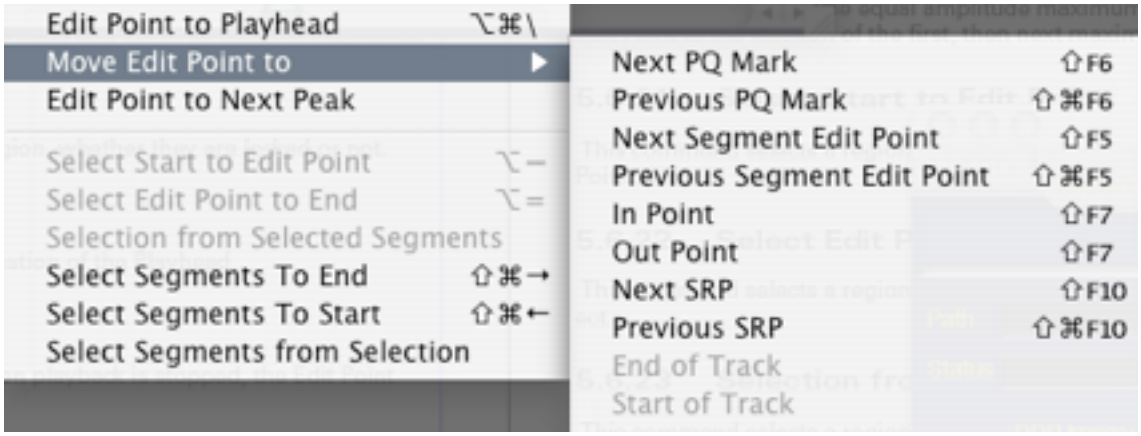

Figure 6.15: The Move Edit Point to submenu

With this set of choices, the Edit Point can be quickly moved to a number of predefined positions:

- The next PQ mark
- The previous PQ mark
- The next Segment Edit Point …the Black Fade or Crossfade
- The previous Segment Edit Point …the previous Black Fade or Crossfade
- The In Point
- The Out Point
- The next SRP
- The previous SRP
- The End of Track …the last Fade Out of the Project
- The Start of Track …the first Fade In of the Project

6.6.20 Edit Point to Next Peak

This command examines the amplitude of all audio samples in the selected region or segments, and moves the Edit Point to the location of the maximum sample within the selection. If there are more than one equal amplitude maximum samples, then the command moves the Edit Point to the location of the first, then next maximum samples in turn.

6.6.21 Select Start to Edit Point

This command selects a region from the first Fade In of the Project to the location of the Edit Point.

6.6.22 Select Edit Point to End

This command selects a region from location of the Edit Point to the last Fade Out of the Project.

6.6.23 Selection from Selected Segments

This command selects a region from the first Fade In of the first selected segment to the last Fade Out of the last selected segment.

6.6.24 Select Segment to End

This command selects all segments from the Edit Point to the last segment in the Project, including the segment in which the Edit Point is located. If the Edit Point has not been placed, the command selects all segments from the first selected segment to the last segment in the Project.

Note that, to quickly determine if the Edit Point is placed somewhere in the Project regardless of zoom level, simply check the left DUR or duration field at the top of the Project. Since the Edit Point is really a zero duration selection, the DUR field will show a zero value whenever the Edit Point is present, even though it may not currently be in view.

Figure 6.16: The DUR field showing the presence of the Edit Point

6.6.25 Select Segment to Start

This command selects all segments from the first segment in the Project to the Edit Point, including the segment in which the Edit Point is located. If the Edit Point has not been placed, the command selects all segments from the first segment in the Project to the selected segment.

6.6.26 Select Segments from Selection

This command selects all segments that are part of the selected region, including the segments in which the start and end of the selection is located.

6.7 The View Menu

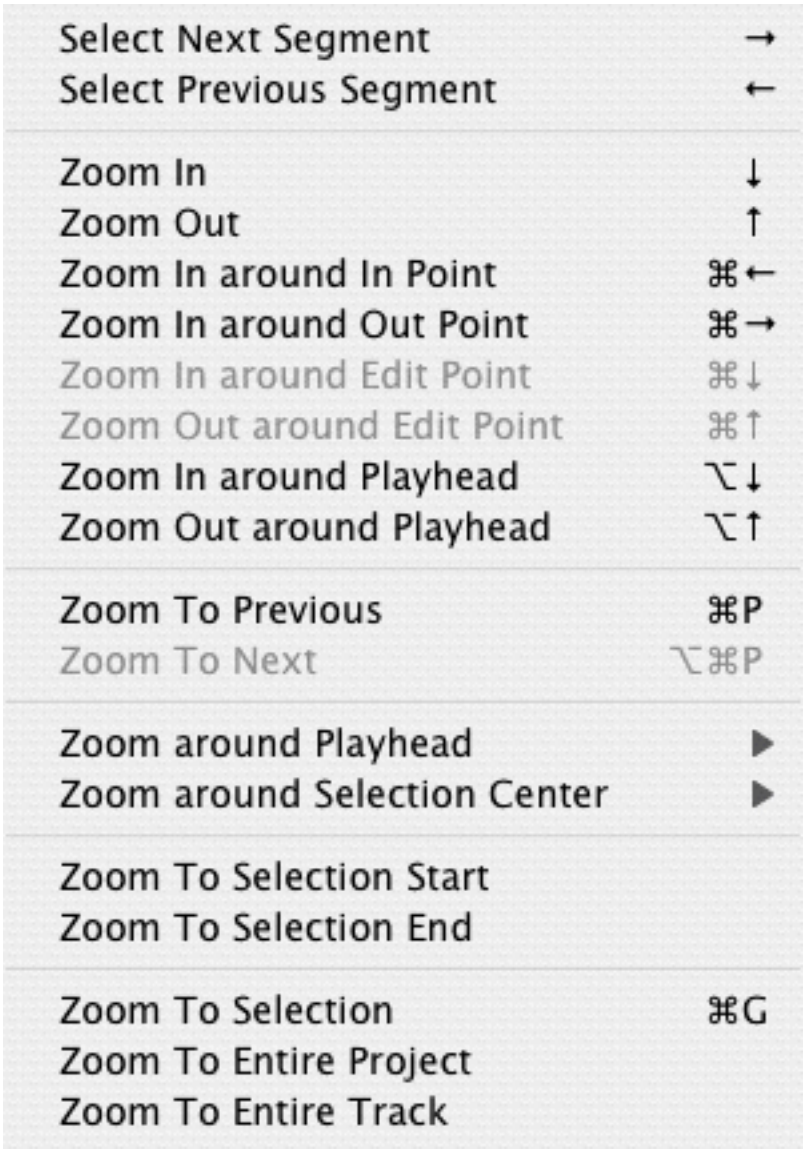

Figure 6.17: The View menu

6.7.1 Move Forward/Backwards/Select Next/Previous Segment

These contextual commands change dynamically, depending on whether a segment is selected or not. When a segment is not selected, Move Forward/Backwards move the contents of the Panel forward and backward along the time line. The zoom factor or magnification stays the same.

When one or more segments are selected, these commands change to enable you to select the "next" segment. If one segment is selected, the meaning and function of the commands are clear but, if more than one segment is selected, then Select Next will select the segment

after the last currently selected segment and Select Previous will select the segment just before the first currently selected.

6.7.2 Zoom In/Out

The zoom commands change the zoom factor or magnification, expanding or reducing the time scale by 90%, with 10% overlap from the previous view for visual context. Zooming in provides more detail while zooming out lets you see more of the overall program.

6.7.3 Zoom In Around In/Out Point

These commands change the magnification of the waveform display while centering the waveform display on the In Point or Out Point. The amount of time shown around the In or Out Point is defined by the Zoom to In/Out setting in the Time Display tab of Windows > Preferences. See section 6.9.5 for information on the Time Display tab.

6.7.4 Zoom In/Out around Edit Point

These commands change magnification while keeping the waveform display centered on either the Edit Point and is very handy for determining context. The amount of time shown around the In or Out Point is defined by the Zoom to In/Out setting in the Time Display tab of Windows > Preferences. See section 6.9.5 for information on the Time Display tab.

6.7.5 Zoom In/Out around Playhead

These commands combine a Zoom In/Out command while keeping the waveform display centered on the Playhead, also very handy for determining context.

6.7.6 Zoom to Previous/Next

These commands are like Undo/Redo for zoom commands. PreMaster CD remembers the last lower resolution (out) zoom level. To return to an prior zoomed out level, choose Zoom to Previous. To return to the more recent zoom level, choose Zoom to Next.

6.7.7 Zoom around Playhead

This command zooms with the Playhead in the center of the waveform display, and is very handy for determining context. The level of zoom is determined by a submenu.

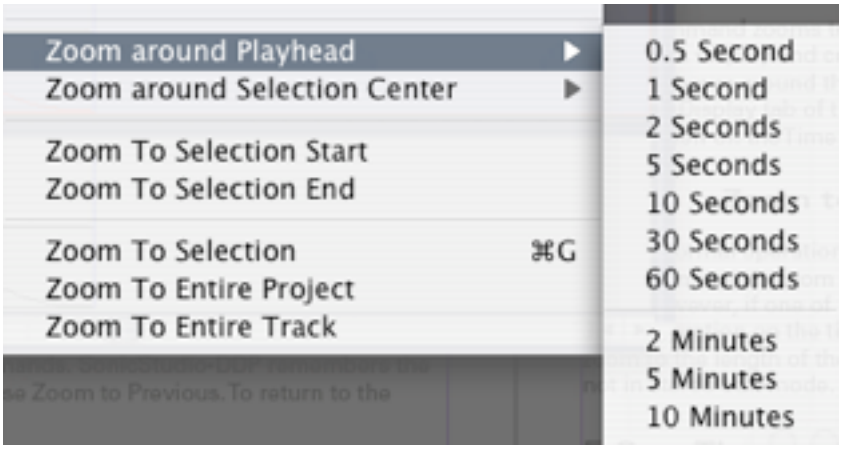

Figure 6.18: The Zoom around Playhead menu

The amount of time chosen in the submenu indicates the total amount of time shown in the display after the Zoom Around Playhead command is selected. The amount of time will be equally divided between the area to the left and right of the Playhead position.

6.7.8 Zoom around Selection Center

This command is similar to Zoom around Playhead, except that instead the display is centered around the centre of a selected region or selected segment(s).

6.7.9 Zoom to Selection Start/End

This command zooms the waveform display to the start or end of the current selection with the start or end of the selection centered in the waveform display and is very handy for refining a selection's boundaries. The amount of time shown around the selection boundaries is defined by the Zoom to Sel Start/ setting in the Time Display tab of Windows > Preferences. See section 6.9.5 below for information on the Time Display tab.

6.7.10 Zoom to Selection

This command zooms to the currently selected region such that the selection is centered in the waveform display and covers a preset percentage of the waveform display area. The amount of time shown around the selection boundaries is defined by the Zoom to Sel Start/ setting in the Time Display tab of Windows > Preferences. See section 6.9.5 for more information on the Time Display tab.

6.7.11 Zoom to Entire Project/Track

Under normal operation with a stereo Project, these two menu commands work identically. These commands zoom so that the entire program is shown across the entire waveform display. However, if one of the two Panels contains more audio information, stretching over a longer duration on the time line than the other channel, the Zoom to Entire Track command will

zoom to the length of the selected track. This situation typically occurs if the two Panels contain dual mono material or a wildly “stereo” program created in mono editing mode.

6.8 The NoNOISE Menu

PreMaster CD offers an option that allows you to restore damaged audio with precision and speed. See Chapter 7 below for more information on NoNOISE native’s Manual DeClick II option.

6.9 The Windows Menu

The Windows menu provides quick access to all available windows within PreMaster CD and an active Project.

6.9.1 Meters

This command toggles the Meters window or Master section. See section 5.1 for a detailed description of this window.

6.9.2 Mark Info

For more information on the Mark Info window, see sections 4.8 and 3.10.2. Section 6.5 discusses the Mark Menu.

6.9.3 The Preferences Window

Some of the functions and commands within PreMaster CD can be changed to adhere to your preferred values or behavior. All of these preferences can be adjusted in the Windows > Preference Window

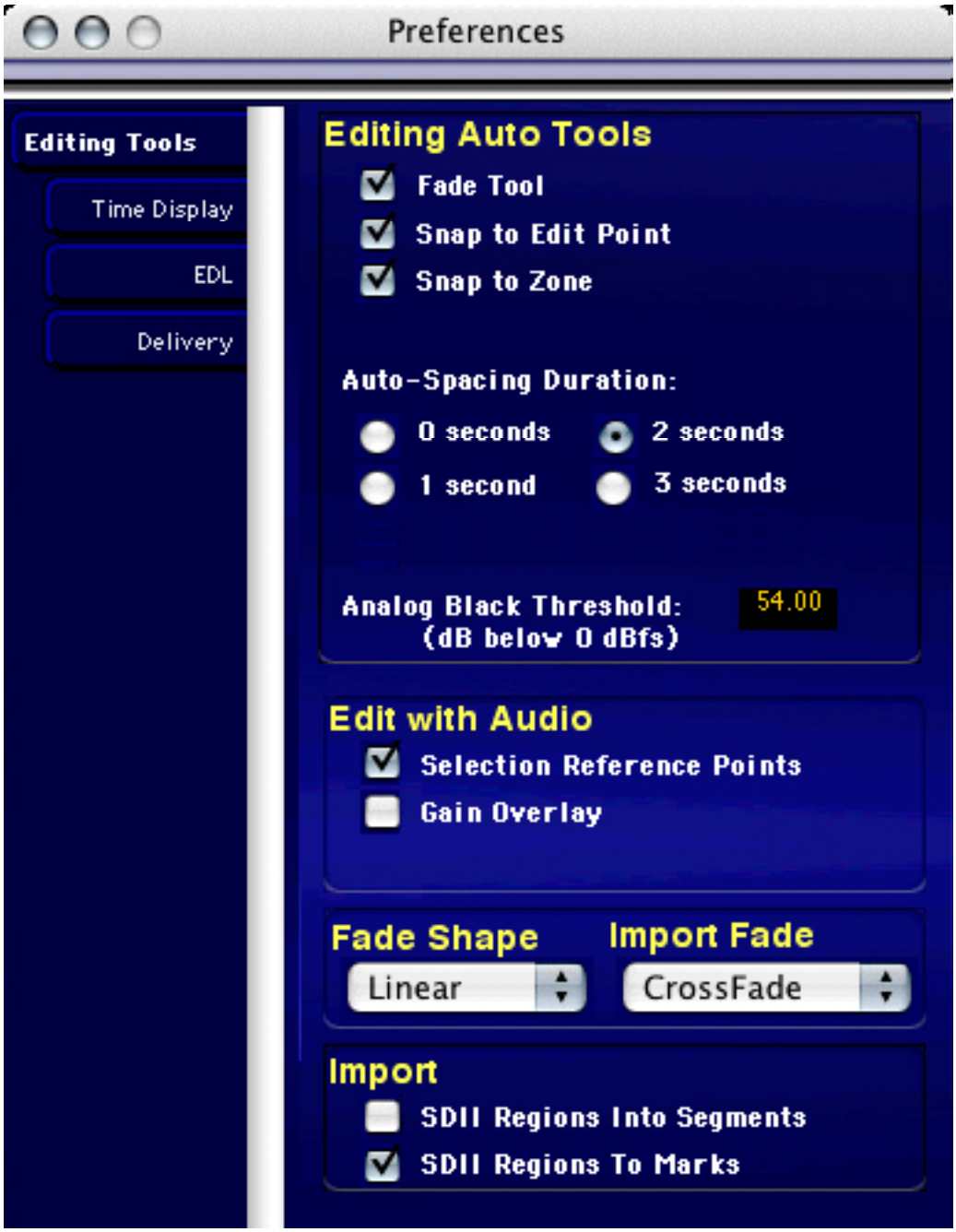

Figure 6.19: The Preference window showing the Editing Tools tab

The Preference window is displayed by selecting the Windows > Preferences command.

6.9.4 Setting Preferences — Editing Tools Tab

6.9.4.1 Editing Auto Tools

The Editing Auto Tools section has the following options:

- Fade Tool: When checked, the Fade Tool will be enabled for editing. To learn more about the Fade Tool and its properties, see section 3.8.1 and 4.1 for a full description.

- Snap to Edit Point ON: When checked, dragging a segment near the position of the Edit Point will cause the segment to auto–snap. This feature is really only applicable when dragging audio into a Project from the Finder or another open Project.

- Snap To Zone: When the zone snap is checked, dragging a segment near the start or end of another segment will cause the segment to auto–snap to the red or blue snap locations. See section 4.3 for more information on the drag & drop, auto–snap functions.

- AutoSpacing Duration: As described in section 4.3, AutoSpace uses a pre-selected time value to space the segments. Here, this value can be selected between 1 and 3 seconds. Alternatively, AutoSpace can be turned off as well.

- Analog Black Threshold: This field shows the default value used by the Mark > Analog Black to Marks command for the amplitude threshold. This value, expressed as dB below 0 dBFS, sets the loudness threshold below which a Start of Track or End of Track mark will be placed. See section 3.9.4 for more information on automatically placing PQ marks.

9.4.2 Edit with Audio

- Selection Reference Points: When editing, this setting causes SRPs to move along with their associated segment. They are also included with the audio when it is copied to the clipboard.

- Gain Overlay: When editing, this setting causes gain nodes to move along with their associated segment. They are also included with the audio when it is copied to the clipboard.

6.9.4.3 Default Fade

This selector determines the default fade curve used when any new fades are created PreMaster CD. The five curve options are:

- Cosine
- Root Cosine
- Linear
- Root Linear
- Exponential

Linear fades, the default, are the most broadly applicable choice. Section 4.1.2 briefly discusses the five curve shape options.

6.9.4.4 Import

- SDII Regions Into Segments: When on, Sound Designer II regions, if present, will automatically be converted to separate segments upon opening in PreMaster CD. When off, the entire SDII image will be imported as one continuous segment.
- SDII Regions To Marks: When on, Sound Designer II regions, if present, will force PreMaster CD to put marks at the region's start points. When off, the entire SDII image will be imported as one continuous segment.

6.9.5 Setting Preferences — Time Display Tab

6.9.5.1 Time Display

The Time Display time code format selector allows you to preset the display time code format to 75 frames per second, 30 fps NDF, seconds or samples. Compact Discs use a special time code format, 75 fps, not used elsewhere while 30 fps NDF or "30 non–drop," 30 frames per second non–drop frame, is the legacy standard used by the original, 1600/1610/1630 series of video cassette–based CD preparation systems.

6.9.5.2 Nudge A/B/C

The values in these fields define the amount of time that segments will be 'nudged' when the Edit > Nudge Left/Right commands are applied. For a complete description of the working of these commands, see section 6.2.17.

6.9.5.3 Zoom to In/Out

The time value entered here defines the amount of time in the total display after a View > Zoom Around In/Out Point command. See section 6.7 for a full description of these commands.

6.9.5.4 Zoom to Sel(ection) Start/(End)

The time value in this field defines how much time will be displayed when the View > Zoom to Selection command is applied. For a full description of this command, see section 6.7.10.

6.9.5.5 Play Around In/Out Point

The values in these fields define how much time will be auditioned when the Play > Play To/From In/Out Point commands are invoked. For a full description of these commands, please see sections 6.4.10 and 6.4.11.

6.9.5.6 Show Subframes

This check box, when enabled, forces all time fields at the top of the Project display to show additional time code subframe information.

6.9.6 Setting Preferences — EDL Tab

6.9.6.1 View

The View section has the following options:

- Show Track Bar: When checked, an additional layer of visual feedback is enabled in the Project. This alternate view provides a graphical approach to evaluating and manipulating your PQ metadata. Existing metadata is displayed from an object–oriented perspective, whereby each CD Track that will result from your current PQ placement is shown in grey while the pause between tracks is shown in blue. Section 3.9.5 above discusses the Track Bar.

- Show Segment Names: When checked, segment names will show in the Title Bar. When unchecked, the Title Bar of segments remains empty.

- Background Waveforms: When checked, waveforms will be generated in the background upon opening sound files from other DAWs. When unchecked, no graphical "waveform files" will be produced automatically. The File > Build Waveform… command will manually generate waveform files.

- Remove Waveforms on Close: When checked, waveform metadata will be deleted when a Project is closed.

- Zoom Factor (%): When zooming in or out, the display will be zoomed by the factor defined in this field. The default 90% means that 90% of the current waveform view will be zoomed, with 10% overlap for visual context. This preference only applies to selections.

6.9.6.2 Display Auto Tools

The Display Auto Tools has the following options:

- AutoScale On: When enabled, the display is scaled vertically so that the maximum peak within the entire Panel becomes full scale. This preference provides overall amplitude scaling while maintaining visual context between loud and soft passages.

- Scale to View: When enabled, the display is scaled vertically so that the maximum peak within the currently visible waveform becomes full scale. This preference provides local magnification, excellent for fine editing, but requires that you refer to the numeric vertical scale to determine the general amplitude.

- Show Track Scale in dB: When enabled, the amplitude scale is shown in dBFS, or dB full scale referenced to a "full" 24 bit AES/EBU data word. When off, the Panel's amplitude scale is shown as a non–dimensional, normalized value ranging from 0 to ±1, equating to digital silence or full scale, respectively.

6.9.6.3 Playing Auto Tools

The Playing Auto Tools section has the following settings:

- AutoScroll Playhead: When selected, the Playhead will move as normal until it reaches the right edge of the waveform display. Then, the Move Forward command automatically takes place, moving the waveform view to the right.

- AutoScroll Track: When selected, the Playhead stays centered in the waveform display while the underlying waveform display continuously scrolls.

6.9.7 Setting Preferences — Delivery Tab

6.9.7.1 Delivery

- Keep DDP Image: This check box retains the directory or folder containing the DDP files set that forms that basis for all CD-R deliveries. See section A1.5 for information on using the DDP file set for replication.

- Emulation Mode: The Emulation Mode check box causes PreMaster CD to emulate a CD-R "burn," allowing you to validate your Project's settings without writing to a disc. While disabling writes to your optical mechanism in this mode, PreMaster CD does write a CD's worth of data, approximately 650 MB, to your hard disk.

- Write CD Text: This check box causes PreMaster CD to write CD Text–specific CD+G metadata to a delivered CD-R. CD Text metadata will be included in DDP file sets. See sections 3.10.1 and A1.5 for specifics about CD Text.

- CD (Write) Speed: The speed selector calls out the speeds that the target mechanism and host are capable of providing for your delivery. When choosing CD-R delivery speed, remember that the speed is inversely proportional to pit jitter. That is, higher speeds will induce more jitter in the CD's physical pit structures while lower speeds will result in less jittery pit structures. Lower jitter is generally better in terms of subjective audio quality, because it requires less vigorous clock regeneration in the digital–to–analog converter or DAC to attain a reasonable amount of jitter in the final analog output.

6.9.7.2 Offsets

- Start Offset: It takes a typical CD player about two to twenty frames to fill its buffer and start producing valid audio data after it has located the correct Track Start location. The Start Offset back times the Track Start time that the player reads to ensure that the beginning of the track will not be cut off by the player.

- End Offset: The End Offset prevents the player from muting too early at the end of the track. This offset value applies to all End of Track marks, including the last.

- Track 1 Offset: This setting allows the Start of Track Mark for Track 1 to have it's own offset value. This is because Track 1 on a Compact Disc is different from the remaining tracks and requires an extra long offset to allow CD transports to initialize prior to the onset of audio data recovery.

- Splice Offset: If a Start of Track mark is not preceded by an End of Track mark from the previous track, it is considered to be a "splice" or segue. The Splice Offset applies only to the special case of splices. The Splice Offset must always be equal to or less than the Start Offset. Splice Offsets are typically a bit more than half of the normal Start of Track offset.

- Minimum Index Width: This field sets the minimum time between Index marks. According to the Red Book standard, Index marks should be at least 1 second apart. End marks that are closer to the Start than the Minimum Index Width are ignored.

- Disable Offsets: If this button is enabled, the offsets shown in the offset windows will not be subtracted from the PQ mark times, either for display or for delivery.

6.9.7.3 Dither

- Dither Type – Shaped PDF: This radio button selects Sonic Studio's proprietary spectrally shaped, triangular PDF (probability density function) redithering.

- Dither Type – MBIT+: This radio button selects iZotope's proprietary MBIT+ redithering. The Shape is preset to Ultra, the Amount is preset to High, and Auto Blank is Enabled.

- Enable Dither On Output: When on, dither will be applied to the output at all times, redithering the output to either 16 or 24 bits of resolution. When off, both the monitor and delivery outputs will be bit transparent except during fades or other gain changes.

- The DITHER indicator in the upper right of the Project window reflects the current state of the Dither on Output preference. Control–clicking on the yellow DITHER label in a Project produces a convenient contextual menu, allowing you to enable or disable redithering, as well as set the output bit depth for which redithering will be optimized. Section A1.2 includes a discussion of redithering.

- Turn Off Delay: defines the time (in seconds) before dither is turned off after the last sample of audio has been played. This setting applies to Sonic Dither only.

- Bit Resolution: this selector determine the final word length, either 16 or 24 bits. Internal resolution is greater than 24 bits, so the data word is rounded to the desired length. In general, redither should be enabled to ensure linear output when word length is reduced.

Note that for CD delivery, 16 bit resolution is the only correct setting as the program on an audio Compact Disc is stored as 16 bit data. Setting 24 bit resolution for final CD masters will result in drastic truncation of the 17th through 24th bit, resulting in audibly reduced quality.

Chapter 7..... NoNOISE II

Sonic Studios' NoNOISE II is the world's premier tool for restoring vintage and problematic audio recordings. PreMaster CD 3 offers two options that are part of the larger NoNOISE II family.

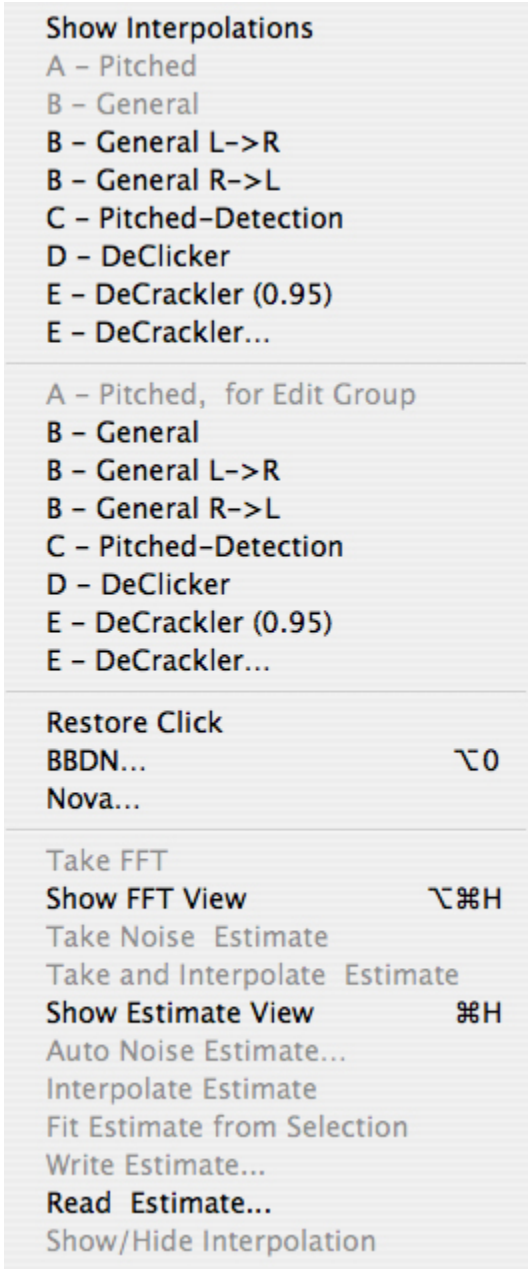

Figure 7.1: PreMaster CD's NoNOISE menu

The Manual DeClick option precisely removes impulse noise, analog or digital overloads, harmonic and intermodulation distortion, and provides a unique solution to obscenity masking.

The FixIt option is an entry level version of the complete NoNOISE II suite. It includes the EQ, DeNoiser, a subset of the complete Manual DeClick option mentioned above, and Manual DeCrackle and a high quality Sample Rate Conversion utility.

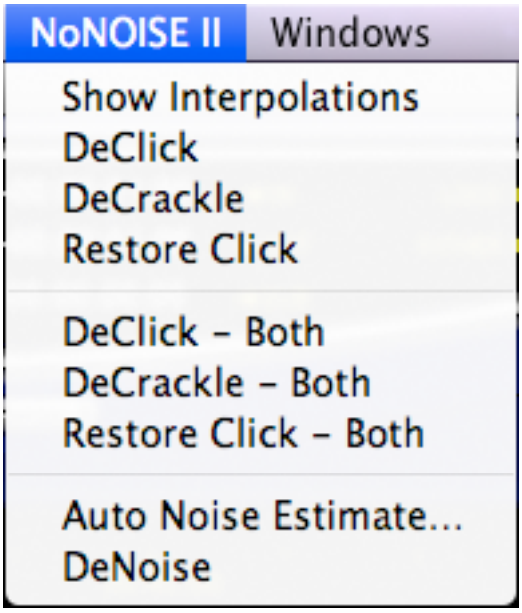

Figure 7.1: PreMaster CD's NoNOISE FixIt menu

7.1 Manual DeClick

The Manual DeClick option provides tools for isolating and removing individual transient impairments in a sound file. Manual DeClick assists in removing unwanted noises such as clicks, pops and thumps. It offers five different interpolation algorithms that are capable of correcting even difficult audio anomalies.

The algorithms analyze audio on either side of the anomaly and, based on this information, synthesizes replacement samples. Manual DeClicking substitutes the repaired samples for the original program material.

Note that Manual DeClick processes generate two new files for each sound file that is repaired. These ".cd" and ".rl" files contain the samples removed during repair and a list of their locations, respectively. If you move or delete either of these files, you will not be able to restore the original samples, undoing the repair.

Manual DeClick is generally used, with the exception of the E Type, on very short duration regions; 14 msec. or less. Though the algorithms are capable of credible repairs over longer durations, only experience using each algorithms will allow you to judge sensible parameters.

7.1.1 Interpolation Algorithms

There are several interpolators that are available in PreMaster CD. Each is suited to a particular type of audio problem and context.

7.1.1.1 The B Type General Interpolator

The Type B interpolator is the general purpose algorithm. The majority of declicking situations can be handled by simply choosing this option.

The default Type B interpolator examines the audio on either side of the selection to determine the context for resynthesizing audio to fill the gap. For the B Type, there are two additional variations of the command that bias the context in a particular "direction," ignoring the material before or after the impairment.

If, for example, a click occurs just after a percussive event, the default Type B interpolator would include part of the percussive event in its resynthesis, producing a unconvincing repair. The B - General R-> L option would ignore the audio to the left, using only the samples after the selection is build the repair. Conversely, the B - General L-> R option uses only samples before the selection to resynthesize a repair.

Here are three examples:

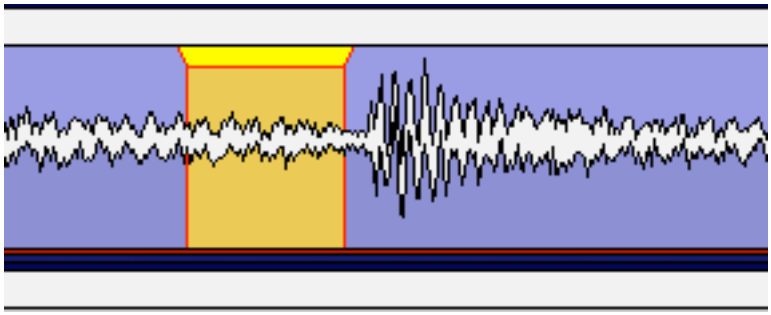

Figure 7.2: The original material

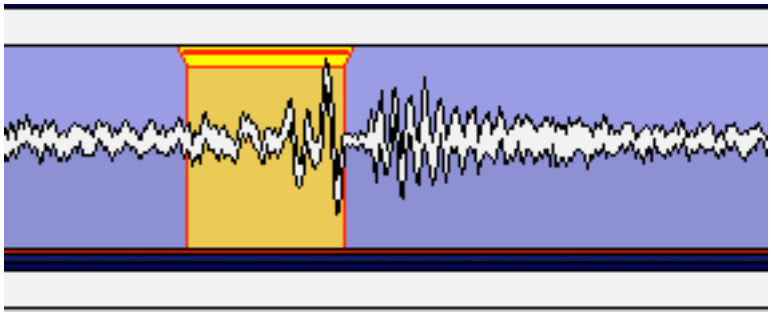

Figure 7.3: A "repair," using the default B Type algorithm

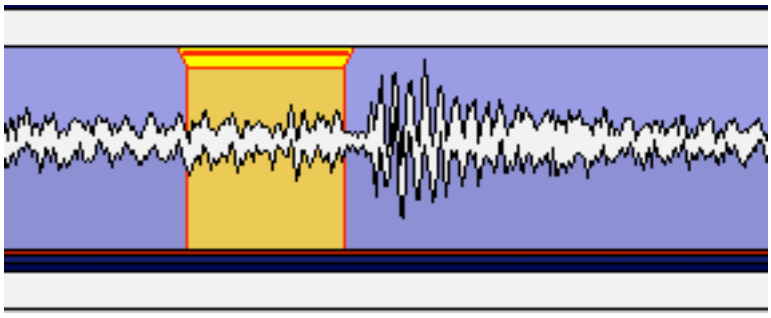

Figure 7.4: A better "repair," using the B - General L-> R option

Though the above examples are extreme, a 60 msec. selection to clearly show the result, they should illustrate the concept of using the left–oriented or right–oriented B Type option when needed.

7.1.1.2 The D Type DeClicker

The D Type and E Type DeClickers, discussed below, are very high-order algorithms used to correct problems that elude other repairs. Both interpolators use 80 bit precision to produce very high quality interpolations.

The Type D DeClicker is tailored for use on the human voice, though it will provide excellent results on most any semi–periodic material. It is only capable of replacing about 80 milliseconds worth of samples before it bogs down. Even so, a repair half that duration will still take quite a while, even on a fast computer.

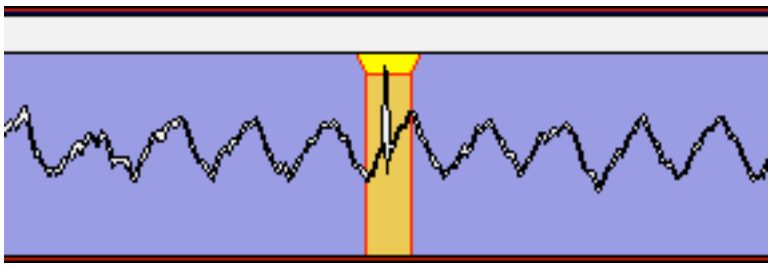

Figure 7.5: A fairly periodic section with click

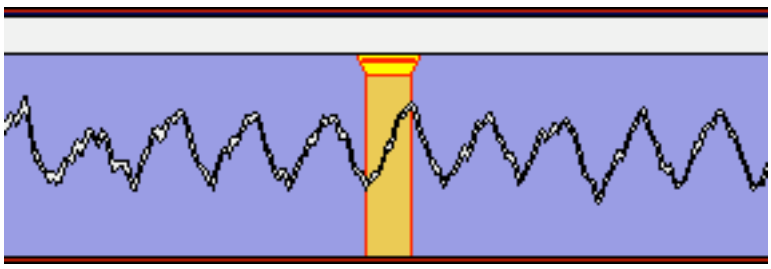

Figure 7.6: The repair using D Type

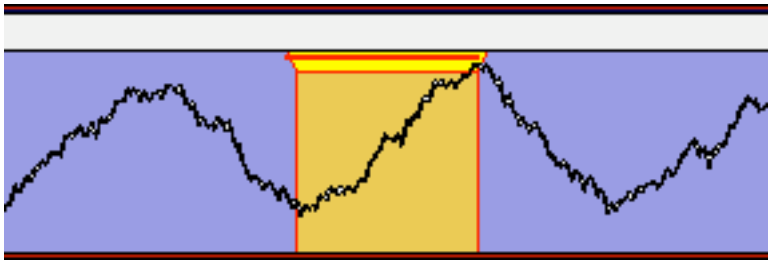

Figure 7.7: A zoomed in view of the above repair

7.1.1.3 The E Type DeCrackler

The Type E Interpolator, though fundamentally similar to the D Type, is implemented so it can be applied to passages of unlimited duration. As with the D Type, expect to wait a while for your result but, it is worth it. The E Type DeCrackler is capable of reducing distortion, including offensive, harsh sounding material. Its micro–repairs leave the audio sounding better without resorting to low pass filtering.

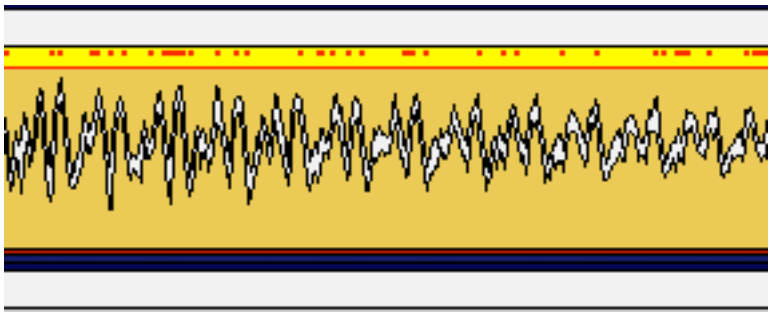

Figure 7.8: E Type's micro–repairs

7.1.2 Using Manual DeClick

Manual DeClick performs stereo repairs. Either channel of a stereo pair can be operated on, the repair will be performed on both.

7.1.2.1 Removing Clicks

1. Using the Waveform display and playback, identify the location of an impairment.
2. Zoom in until you can clearly see the impairment.
3. Click–drag in the Panel to create a time region selection that fully contains the damaged samples.
4. From the NoNOISE® menu, select one of the Manual DeClick types.

NoNOISE replaces the compromised audio with repaired samples. Don't worry about selecting on zero crossing boundaries, the software's intelligence will provide a seamless transition.

7.1.2.2 Restoring Clicks

1. To remove an existing interpolation or repair, Zoom in on the waveform and locate the red "Restore Bar."
2. Click–drag in the Panel to select a region that contains the Restore Bar.
3. From the NoNOISE menu, choose Restore Click.

NoNOISE replaces the interpolated audio with the original audio containing the anomaly.

7.1.3 Obscenity Reduction

In addition to restoration duties, Manual DeClicking can be used to insure the public acceptability of obscene material or to conceal any audio that may not "pass muster" with downstream listeners. Simply select the obscenity as though it were an impairment, and choose your Type. The B Type, when given a one second region to "repair," does a great job of removing the objectionable material and inserting something that will often be preferable to editing in replacement audio. An additional consideration is that, since no material is added or removed, the timing or tempo is not affected.

7.2 FixIt

7.2.1 Introduction

The FixIt option is an entry level version of the complete NoNOISE II suite. It includes basic EQ, the DeNoiser, basic Manual DeClick, basic Manual DeCrackle, and Sample Rate Conversion.

7.2.2 EQ

7.2.3 Basic Manual DeClick & DeCrackle

The FixIt version of NoNoise II option provides a smart tool for isolating and removing individual transient impairments in a sound file. Manual DeClick assists in removing unwanted noises such as clicks, pops and thumps. The algorithm analyze audio on either side of the anomaly and, based on this information, synthesizes replacement samples. Manual DeClicking substitutes the repaired samples for the original program material.

FixIt also includes a entry level version of DeCrackle, an algorithm that reduces surface noise on mechanical recordings, and distortion in any sound file.

Note that Manual DeClick processes generate two new files for each sound file that is repaired. These ".cd" and ".rl" files contain the samples removed during repair and a list of their locations, respectively. If you move or delete either of these files, you will not be able to restore the original samples, undoing the repair.

Manual DeClick is generally used, with the exception of the DeCrackler, on very short duration regions; 14 msec. or less. The DeCrackler can process an unlimited amount of material.

7.2.3.1 Interpolation Algorithms

There are two interpolators that are available in FixIt. Each is suited to a particular type of audio problem and context.

7.2.3.2 The DeClicker

The DeClicker, also known as the Type B interpolator, is the general purpose algorithm. The majority of declicking situations can be handled by simply choosing this option.

The DeClicker examines the audio on either side of the selection to determine the context for resynthesizing audio to fill the gap.

Here's an example:

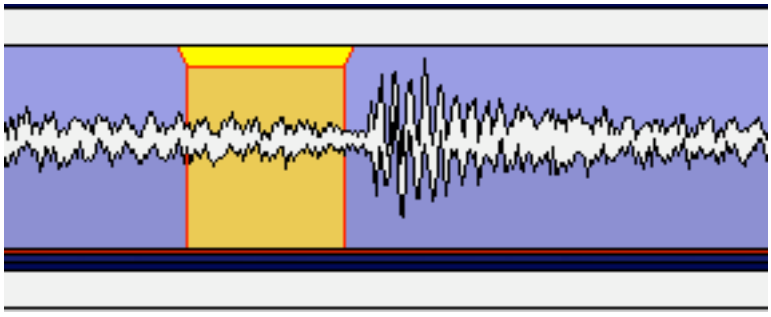

Figure 7.2: The original material

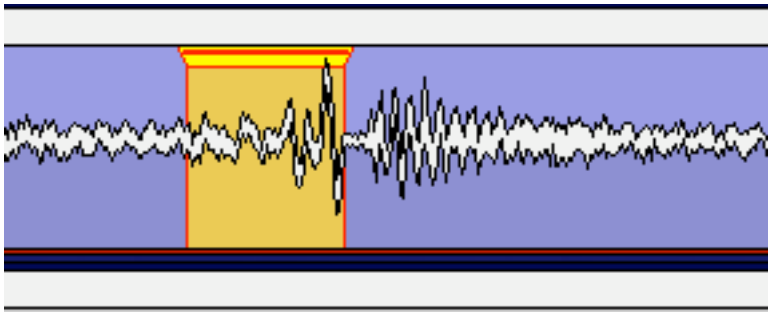

Figure 7.3: A "repair," using the DeClicker

7.2.3.3 The DeCrackler

The DeCrackler, also known as the Type E Interpolator, is quite different from the the Declicker. It is designed to reduce all kinds of distortion and, unlike the DeClicker, is implemented so it can be applied to passages of unlimited duration. You may have to wait a while for your result but, it is worth it. The DeCrackler is capable of reducing distortion, including offensive, harsh sounding material. Its micro–repairs leave the audio sounding better without resorting to low pass filtering.

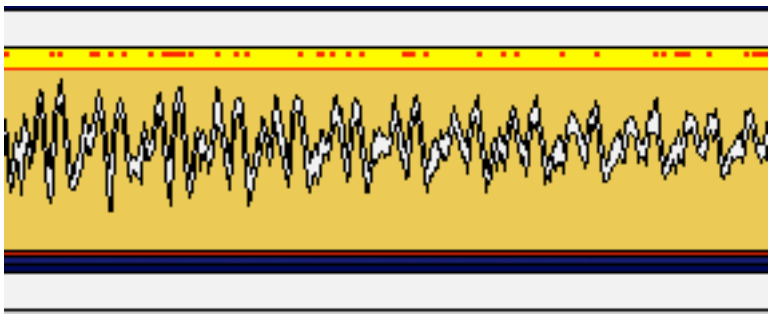

Figure 7.8: The DeCrackler's micro–repairs

7.2.3.4 Using DeClick

Either channel of a stereo pair can be operated on, the repair will be performed on both. Either DeClick algorithm can perform stereo or mono repairs.

Using the Waveform display and playback, identify the location of an impairment. Zoom in until you can clearly see the impairment.

1. Click–drag in the Panel to create a time region selection that fully contains the damaged samples. From the NoNOISE II menu, select either DeClick or DeCrackle.

FixIt replaces the compromised audio with repaired samples. Don't worry about selecting on zero crossing boundaries, the software's intelligence will provide a seamless transition. However, do be aware that very low frequency artifacts may be present after a click and, they will not be obviously visible in the waveform. If you find that the DeClicker "leaves behind" some low frequency noise after a click has been removed, then Restore the click back to its original state, then select more time after the visual end of the click and repair again.

The DeCrackler is able to intelligently identify distortion on a very small time scale. Don't be surprised to find "micro–repairs" within your time region selection.

7.2.3.5 Restoring Clicks

First, make sure the NoNoise II > Show Interpolations option is checked. Any existing "interpolation" or repair will appear marked with a horizontal red line, the "Restore Bar," over the samples that have been altered.

1. To remove an existing repair, zoom in on the waveform and locate the red Restore Bar.
2. Click–drag in the Panel to select a region that contains only the Restore Bar you wish to undo.
3. From the NoNOISE menu, choose Restore Click.

NoNOISE replaces the repaired audio with the original samples containing the defect.

7.2.3.6 Obscenity Reduction

In addition to restoration duties, the DeClicker can be used to insure the public acceptability of obscene material or to conceal any audio that may not "pass muster" with downstream listeners. Simply select the obscenity as though it were an impairment, and DeClick it. The DeClicker, when given a long duration region to "repair," does a great job of removing the objectionable material and inserting something that will often be preferable to editing in replacement audio. An additional consideration is that, since no material is editorially added or removed, the timing or tempo is not affected.

7.2.3 DeNoise

The Broadband DeNoiser™ is the highest fidelity single–ended noise reducer available today. FixIt's DeNoise is an entry level version capable of rescuing both old and new recordings alike, reducing broadband noise from analog sources or, acoustic contamination from HVAC systems and traffic noise. Also, the DeNoiser can subjectively "shrink" the size of a perceived acoustic space by reducing existing reverberation in a recording.

Broadband noise, whether white, pink or brown in spectrum, is one of the most common forms of audio degradation. Noise can be introduced from any of a number of sources, including the modulation and asperity noise inherent in analog tape recording and Johnson or thermal noise from microphones, preamps, and other analog signal processing equipment. Broadband DeNoise is a single ended broadband noise reducer that, unlike less refined examples, can suppress or eliminate broadband noise with little or no audible artifacts, even at extreme settings.

To supress such noises in your program, it is necessary to analyze the noise spectrum and "adapt" the denoising algorithm to the characteristics of the material. The DeNoiser operates by means of analysis and resynthesis, though it can be thought of as 2048 bandpass filters, each followed by a below–threshold expander. This is somewhat analogous to the classic analog Dolby and dbx multi–band, double–ended noise reduction systems of yore.

An FFT or Fast Fourier Transform analysis is performed on a user–specified sample of noise from the material to be processed. The average amplitude of noise in each of 2048 individual frequency bands or "bins" is determined. The result of this analysis is a "Noise Estimate," which is used to set the average threshold of the noise reduction. The Estimate sets aggregate threshold for the expansion.

During processing, the source material is also subjected to a 2048 point FFT analysis. The average amplitude of signal in each bin is compared against the threshold value determined by the noise Estimate. Based on this comparison, the algorithm determines whether a given band at that particular instant contains audio signal or only noise.

If a frequency bin is found to be at or above threshold, its gain remains at unity. If it is determined that the signal amplitude in that band falls below threshold, then it is considered "noise" and the amplitude of that band is reduced by an amount determined by the Attenuation parameter, discussed later. The results of this comparison and amplitude compensation for all bands is a modified version of the original FFT frequency analysis. A reverse FFT is then performed using the new, adjusted version, reconstituting the audio signal with aggregate noise attenuated by the specified amount. Because the DeNoiser operates with high frequency resolution and at extended precision, the removal of noise is precise and artifact–free.

7.2.3.1 The Noise Estimate

The first step in DeNoising is to derive a Noise Estimate from the material to be processed. The Noise Estimate, or simply Estimate, is an individual "fingerprint" of the noise and determines local threshold values for each frequency bin. FixIt's NoNOISE II menu provides a command for creating and saving the Estimate. The Estimate determines the result of the entire denoising process, so it is important to ensure that the estimate taken is valid and represents the true noise floor of the source sound file.

7.2.3.2 Noise Estimates

The procedure for taking a usable Estimate is simple. First, open the source sound file into a Project. Then, identify a short section of audio where there is only noise or predominantly noise. About 0.3 to 0.5 seconds is sufficient. Click–drag to create a time region selection of the noise. The next section below discusses where to take a Estimate in detail.

From the NoNOISE II menu, select the Auto Noise Estimate… command to first create the Estimate, then save the Estimate, applying "Bin Controls," which are individual threshold controls for separate regions of the frequency spectrum. The Auto Noise Estimate… command results in a standard file naming dialog that allows you to name and save the Estimate as a file that will be used by the DeNoiser.

7.2.3.3 Where to take an Estimate

Once the source sound file is opened into a Panel of a Project, the first step is to identify a suitable location from which to take the Estimate. Since the denoising algorithm depends on a constant amplitude and spectrum in the noise floor, try to listen and locate a time region with uniform noise. As to duration, optimum results are obtained when the Estimate is taken from a section of pure noise between about 0.3 and 0.5 seconds in length, with a worst case minimum of 100 milliseconds.

If a region of pure or "clean" noise, noise uncontaminated with program, is unavailable as is often the case with tighly edited material, then choose a region with minimal program. The resulting Estimate will require manual adjustment as discussed below. If an Estimate must be

taken in presence of signal, it is advisable to avoid sections of spectrally complex or non–harmonic material as it makes manual adjustment more time consuming.

It is usually necessary to derive a separate Estimate for each cut or take. If these are contained in a consolidated sound file and the spectrum of the noise varies for each cut, then the consolidated file should be denoised in sections, so that the optimal combination of estimate and parameters can be applied to each cut.

Unless there is strong reason to believe that each cut in a compilation or consolidated file was:

1. recorded in the same session with the same equipment
2. at precisely the same levels onto the same media
3. stored in the same way
4. transferred to the same intermediate media in precisely the same way
5. and converted to digital samples in the same signal chain

then it is advisable to take separate estimates for each cut or take. When denoising stereo material, it is also recommended to derive a separate Estimate for each channel. Likewise, if the character or level of the noise floor can be heard to change at all during the recording, then the best results are be obtained by dividing that piece into sections to be denoised individually. After denoising, the individual sections can edited together and sequenced to create a seamless whole.

7.2.4 Running the DeNoiser

7.2.4.1 Overview

Once you have the Estimate file written, you can start the real–time DeNoise process. From the NoNOISE II menu, select the DeNoise command, which brings up the DeNoiser window.

The window, with its two controls discussed below, also has buttons to take an Estimate, open an Estimate file, to open and save the controls and their parameters, to bypass the process, and to toggle between the processed signal and the suppressed or removed portion of the signal.

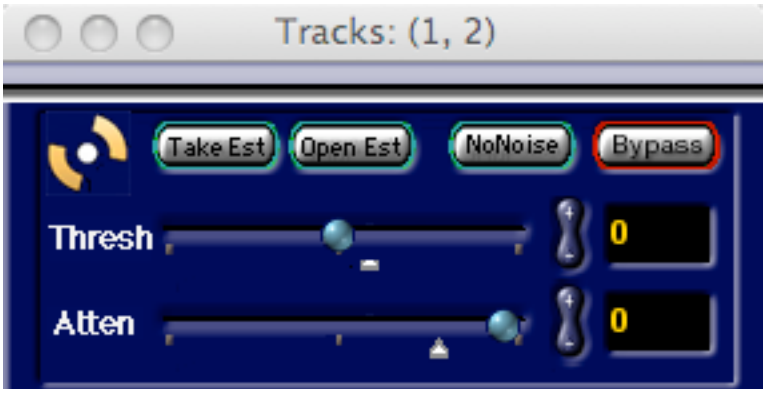

Figure 7.10: The FixIt DeNoise window

7.3.3.2 Button Functions

The Open Est button spawns a standard Mac browser that allows you to specify and open an Estimate file. This will set the threshold and sensitivity of each Bin.

The Save Param buttons allow you save all the current settings in the window, including the name and location of the currently selected Estimate file. The Open Param button allows you to open an existing Parameters file. These files are ASCII text and can be opened in TextEdit for inspection.

The operation of the Broadband DeNoiser is a subjective process. In general though, if too much program is present in the suppressed signal, then you are probably using setting that are too aggressive or your Estimate requires adjustment. Also, it's fairly easy to misinterpret noise as high frequency content so, critical listening with wideband reproducers are required for proper operation.

7.3.4 Broadband DeNoise Parameters

The following parameters are available as horizontal sliders:

Parameter	Range	Default Value	Recommended	Extreme
Threshold	-60 to 60	0	n/a	n/a
Attenuation	-60 to 0	0	-10 to -24	

7.3.4.1 Threshold

The Estimate defines the aggregate threshold applied to each of the over 2,000 individual Bins used by the denoise process. The Threshold parameter allows the entire curve, as a whole, to be moved up or down. Together with the Attenuation parameter, the Threshold parameter provides the basic control over how aggressively the process is applied.

As Threshold is raised, more of the signal at all frequencies is processed. At extremely high settings, a distinctive watery aliasing may be heard in the resulting audio. If the Threshold is set too low, little or no noise reduction is obtained. The Threshold can be thought of as the fine line between noise and music, globally raising or lowering the entire Estimate curve relative to

its original position. Local adjustment of the threshold according to frequency bands is effected by adjusting the Interpolation curve and saving a new Estimate file.

The default Threshold is arbitrary. Threshold and Attenuation settings should generally be adjusted together for best results. The Noise/NoNoise button can help to determine an acceptable compromise setting.

7.3.4.2 Attenuation

This value, in decibels, sets the maximum attenuation to be applied to any Bin. A setting of 0 produces no noise reduction. The higher or more negative this value is set, the greater the reduction in noise, but with increasing danger of producing audible artifacts in the audio signal. Again, Threshold and Attenuation settings should be adjusted together for best results. Critical listening and the Noise/NoNoise button can help to determine an acceptable compromise setting. If the maximum attenuation setting is too extreme, ambience and/or high frequency content may be lost.

7.3.4.3 Shutting Down the DeNoiser

To stop the DeNoiser, simply close the DeNoise window. A dialog will ask if you wish to continue. Click on Yes, to shut down the processor and No to continue DeNoising.

Chapter 8..... The Background Manager

PreMaster 3.0 now comes with a Background Manager to provide basic sample rate conversion from source material to 44.1K for Redbook CD. With the FixIt option a full featured high quality sample rate conversion is provided. In addition, an optional DSD conversion process is supported.

The Background Manager consists of two sections, each represented by its own tab. The first section is the "Audio Client". In this section, sound files can be selected for processing, and processes can be assigned to them.

The second section of the Background Manager is the "Queue Manager." Once sound files have been assigned a process, processes can be managed via the Queue Manager.

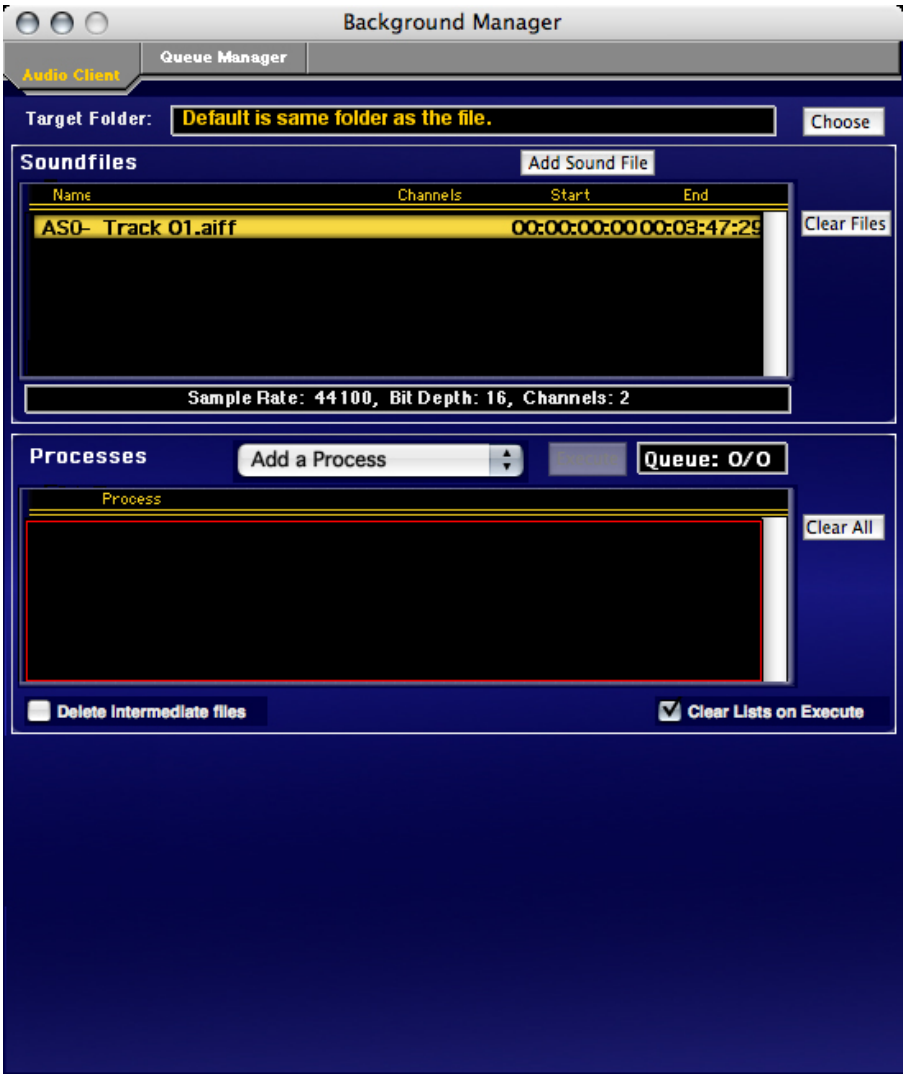

Figure 7.1: The Background Manager showing the Audio Client tab

8.1 The Audio Client tab

To open the Background Manger, select the Windows > Background Manager command. By default, the Audio Client Tab is selected when the Background Manager opens. It largely consists of 2 areas, the "Soundfiles" area and the "Processes" area, topped by the Target Folder field.

In the Target Folder field, the target folder for newly created sound files is specified. To select a target folder, click on the Choose button at upper right. A standard Mac OS browser opens, allowing you to navigate, create and/or choose the desired destination folder. Option–clicking on the Choose button forces soundBlade to use the input file's folder also as the target folder.

Note that, upon initiating a process, the Background Manager will ask to confirm the destination folder.

In the Soundfiles area, sound files can be selected and added by the clicking Add Sound File button. A standard Mac OS browser opens, allowing you to navigate to the location of the desired sound file(s). Once a sound file is selected, it is placed in the Soundfiles list. When a sound file is selected in the list, the black status bar below the list displays the sample rate, word length and number of channels of the selected file. Multiple sound files can be added to the list by repeating this action.

To remove sound files from the list, click to select the list entry and delete it by hitting the backspace or delete key. To clear the list of all sound files, click the Clear All button to the right of the Soundfiles list.

8.1.1 Applying Processes

Once all sound files have been selected, one or more processes to be applied to them in the Processes area. An "Add a Process" menu allows for selection of the desired process(es).

Note that, for PreMaster CD, only the ability to create waveform metadata or sample rate convert to 44100 is available. More background Processes are available when optional packages for PreMaster CD are purchased. These include DSD conversion and full Sample Rate Conversion for FixIt.

When a process is selected, in the space below the Processes area, details and available parameters are shown for the selected Process. This enables adjustment or selection of further options, depending upon the Process selected.

Processes can be deleted from the processes list by clicking on the process and then hitting the backspace or delete key. To clear all processes from the Processes list, click the "Clear All" button to the right of the Processes list.

Once all necessary processes have been selected and placed in the right processing order, they can be automatically performed upon the selected sound files by clicking the "Execute" button. The sound files and the processes to be applied upon them are then "queued" and processing commences. To indicate this action, the "Queue" indicator to the right of the Execute button shows the number of sound files and processes queued.

Once the processes are being executed, all sound files and processes remain in their respective lists. This allows for a quick method of applying different processes to the same file(s) or visa versa. To erase both lists and start new lists for sound files and processes, simply click the "Clear Files" or "Clear All" buttons next to the lists and the Audio Client is cleared from its current list of sound files and processes, respectively. To remove all items in the lists automatically, enable the Clear List on Execute option.

Note that the order in which sound files are processed is fixed and dependant upon the order in which sound files and processes are listed in their respective areas. The primary processing order is defined, top to bottom, by the order in which the sound files are listed in the Soundfiles area. The secondary processing order is given by the order of processes in the Processes list. So, in practice, if more than one sound file is listed and multiple processes are listed as well, first the initial sound file in the Soundfiles list is processed by all processes listed in the Processes list in the order in which they are listed. Be aware that each process is performed upon the resulting file of the previous process. When all listed processes are performed upon the first listed sound file, the following sound file is processed with the same processing in the same order. This is repeated until all sound files are processed with all listed processes.

The end result of this is one resulting sound file per process per sound file. To avoid the creation of superfluous sound files, select "Delete intermediate files" at the bottom left of the Processes area. This causes the Background Manager to delete all intermediate sound files, creating only one final resulting sound file per input sound file. If disk space is not at a premium, it is recommended that intermediary files are retained until the job is finished.

The following processes are available in the Background Manager, depending upon the purchased package of soundBlade:

7.1.1.1 Sample Rate Conversion

The SRC/varispeed background process has thirteen choices of target sample rate. As with any SRC process, if the target sample rate matches the clock rate of the playback system, then the process is considered a sample rate conversion. If, however, the target sample rate does not match the clock rate of the playback system, then the process is considered a varispeed. In either case, the actual processed data in the file is identical, only the sample rate flag is different. SRC preserves pitch and duration, while varispeed produces modified pitch and duration from the original.

PreMaster CD 3.0 supports conversion to 44100 only so there is only one menu choice available. With the FixIt option the Target Sample Rate menu includes the following choices, in kiloHertz:

- 8
- 44.056 (44.1 kHz referenced to 59.97 Hz)
- 44.1
- 47.952 (48 kHz referenced to 59.97 Hz)
- 48
- 88.112 (88.2 kHz referenced to 59.97 Hz)

- 95.904 (96 kHz referenced to 59.97 Hz)
- 96
- 176.4
- 192

In addition to the Target Sample Rate menu, a Percent field is provided to set a target sample rate as specified by a percentage of the source or original sample rate. With either the Target Sample Rate menu or the Percent field, the actual sample rate, in Hertz, is provided in the Processes list for that entry.

7.1.1.2 Build Waveforms

As the name implies, this process creates waveform metadata for the queued sound files. The resulting files, with a ".r" extension, are placed in the same directory as the parent file from which they were derived.

7.2 The Queue Manager tab

To monitor and manage queued processes, the Queue Manager tab offers status information and limited options to influence the queued jobs and tasks being performed.

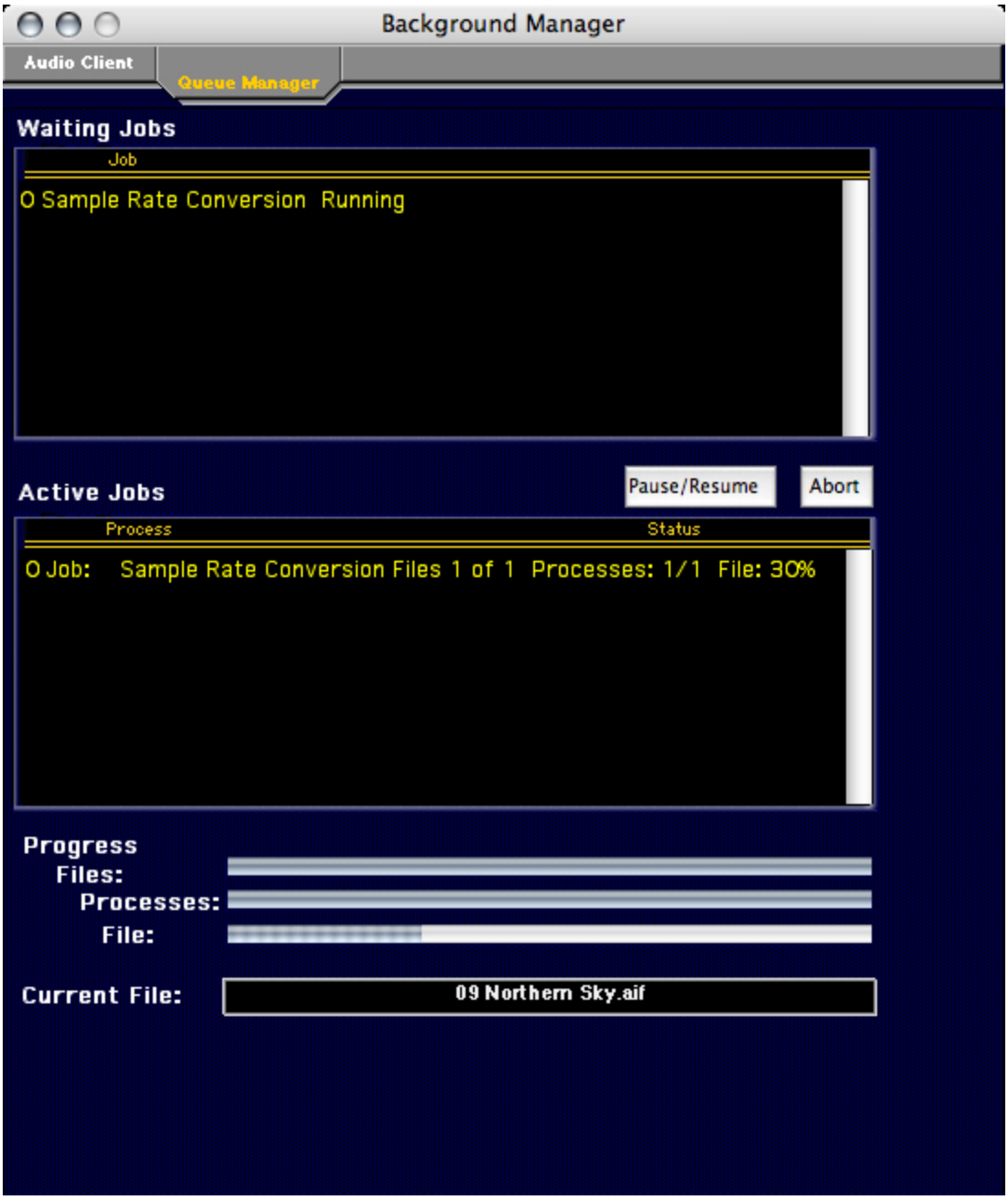

Figure 7.2: The Queue Manager tab

In the top half of the window, all processing jobs in the Queue are listed.

In the bottom half, the active jobs are listed. The progress bars below this area show which file is being processes and which process of the total number of processes to be applied is currently being applied.

To suspend currently running processes, click the "Pause/Resume" button. The current process is halted and queued processes are held in the queue. To resume processing, click the Pause/Resume button again.

To abort the current process, click the Abort button and the current process will be aborted, initiating the next process in the Queue.

7.3 DSD Conversion

PreMaster CD supports an optional DSD conversion utility.

The DSD to PCM conversion background process has several choices of target sample rate. The DSD to PCM will create a 24 bit BWF file. The PCM to DSD will convert to 1.2M DSD

The Target Sample Rate menu includes the following choices, in kiloHertz:

- 44.1
- 48
- 88.2
- 96
- 176.4
- 192
- 352.8
- 384

Appendix 1 .....Best Practices & Maintenance

A1.1 Introduction

Although versatile in many ways, not every function that PreMaster CD offers is the best way of structuring your CD creation and replication workflow. Some solutions are better than others, either for quality reasons or other reasons beyond the scope of this manual. In this appendix, we'd like to provide some guidelines in order to get the best out your software and establish a smooth and efficient production flow.

A1.2 Source Material Considerations

PreMaster CD handles a variety of source file formats. It is thereforee very tempting to 'grab' what you need and add it to your Project. However, some source material might be in formats other than the final 44.1 kHz sample rate and 16 bits word length necessary for CD production. PreMaster CD determines the characteristics of the files you import based on the metadata they contain. It will warn you if the sample rate is not the required 44.1 kHz where necessary, while resolutions longer than 16 bits are rounded down and redithered to 16 bits during the delivery stage. Although the word length conversion implemented by PreMaster CD is of very high quality, you may consider modifying your audio material beforehand with your favorite utilities.

Because all your material destined for inclusion in a final CD replication master will eventually be rounded off (where necessary) to a 16 bit word length, any material using 17 to 24 bits must be word length–reduced to match the CD-DA standard. This is usually accomplished by "rounding down" longer length words to 16 bits. Because the audio data is being modified, it must also be redithered or subtly randomized with an injection of tiny amounts of "shaped" noise in order to prevent distortion. In the Window> Preferences > Delivery pane, you will find that PreMaster CD has a default preference to always redither the data when delivering either a CD, DDP or when simply playing back audio. This is necessary whenever any audio data is modified, as with a fade or gain change, in order to "linearize" or reduce subtle distortion in the resulting data. Redithering is always a trade off between lower distortion and a slightly but audibly elevated noise floor. PreMaster CD uses an exclusive, spectrally shaped "2nd order" or triangular PDF redithering scheme. PDF or Probability Density Function describes the amplitude versus frequency plot of the dither generator. Our shaped dither is an excellent trade off between audibility and optimal linearity.

It's a good practice to prepare all source material needed before moving forward with sequencing, editing and finishing a new replication master. By organizing your source material and storing all relevant data in the same directory, your projects will be highly portable and you'll avoid situations where files have "gone missing" from a job because they were not included in the Project subfolder.

A1.3 Naming Conventions

1. Do not use audio files with the same file name within a Project. Rename beforehand, where necessary, with a descriptive name for later ease of archiving, restoration and project interchange.

2. The P&E wing of the National Academy of Recording Arts & Sciences has published recommendation for naming conventions and other workflow methods to improve project interchange and archiving. See section A4.1 below…

A1.4 Hardware Considerations & Routine Maintenance

In this day and age of a BSD–based operating system and a journaling, self healing file system, it still is incumbent upon the cautious and wise engineer to perform routine maintenance on any host computers. Here are some tips we recommend…

File Systems

If you own a copy of DiskWarrior <www.alsoft.com>, run it monthly or when you host behaves strangely. If you don't own a copy, you should. Periodic maintenance is still needed with OS 10 and there is no better file system maintenance utility than DiskWarrior.

Storage Systems

PreMaster CD is fully compliant with Mac OS 10.4.3 and higher. Therefore, sound material can be used from any drive that your computer can access. This includes network–attached and removable drives as well near–line optical drives. That said, not all mountable storage devices are suitable for reliable real-time or higher speed reads and writes of sound files. Always run PreMaster CD from the boot volume. Always store all files involved in your jobs on direct-attached, local volumes: internal ATA, FireWire, FC, SATA or SAS are acceptable. USB-attached storage peripherals of any kind should never be used. Also, disks must have more than enough free space, to store, record and playback all of your sound files.

1. Although you may find it will actually work, never use LAN or WAN–networked, flexible media or optical drives to record or playback sound files due to their excessive latency. Always copy files from those storage types to a dedicated, local, direct–attached hard disk or FC–networked storage (Fibre Channel) first, then use that disk for all PreMaster CD work.

2. When creating, copying or moving files, consider the file name and path name. Use short path names and employ only alphanumeric characters. The only non-alphanumeric characters that should be used are the hyphen (-) and underscore (_) characters. Other characters, such as !, @, #, $, %, ^, &, *, {, }, |, [,], \ and / will very likely cause problems in your work.

Permissions

Check that you have read and write permissions for the entire application package. Holding down the control key and highlighting the application will spawn a contextual menu with the choice to "Show Package Contents." Showing the package contents allows you to set yourself as read/write, the group should be "admin," also with read/write privileges.

You should also boot from the Apple-supplied install disc that came with your computer. Run the Disk Utility application and perform a Repair Permissions pass on your host. This is a routine maintenance task that, along with DiskWarrior, should be run about once a month.

3rd Party Configuration Management

As with OS 9, OS 10 employs "extensions" to the operating system that extend and sometimes complicate your life. Mac OS 9 had the Extensions Manager but, OS 10 does not ship with such a utility.

Fortunately, several vendors provide shareware or freeware versions of an Extensions Manager equivalent for OS 10. One is White Box's free Diablotin, available from <http://s.sudre.free.fr/> and the other is Teng Chou Ming & Scott Mitchell's X Overload2, a shareware utility available from <http://www.xoverload.com/>. Neither of these products can manage audio plug–ins.

A1.5 Delivering DDPs

DDP file sets created by PreMaster CD, always in their enclosing folder, can be copied to any writable medium you choose, DVD-R or hard disk, for transport to your replicator. Check that the medium you choose has enough space to hold the file set. Also check with your replicator to determine which medium they prefer and whether they are even capable of using DDP as an premastering format. Many bargain companies are not ready to handle DDP deliveries so, we at Sonic Studio suggest you find a reputable facility that does accept DDP file sets of your valuable masters.

Here are some specific suggestions…First, use DVD-R blanks rather than CD-Rs to deliver your DDP file set. That way, the replicator is less likely to confuse your CD-R with DDP files as a CD-ROM job and replicate 1000 CD-ROMs of your DDP file set!

Second, the entire DDP folder or directory must be sent to the replicator. We suggest you ZIP the whole thing and generate a check sum for the resulting ZIP file. We know of one replicator who expects the unZIP'd *contents* of the DDP file set to be placed at the root level of the volume, without an exclosing directory, so always check with your replicator before deliverying the master. For more information on check sum, see the Checksums for DDP section of our Knowledgebase page:

http://www.sonicstudio.com/support

We recommend that you always create a new, empty folder to contain each DDP file set. On the Desktop is a reasonable location for that new folder, making it easier to archive and helping to prevent common problems.

A1.6 Delivering CD-Rs

When delivering a CD-DA–formatted CD-R, consider these recommendations:

- Do set the System Preferences > CDs & DVDs > When you insert a blank CD: to Ignore.
- Always use a high quality burner running the latest official firmware
- Always use a high quality blank media specifically designed for "audio" CDs
- Always record at low speed for lowest jitter
- Never write on or mark up the CD blank with a hard stylus, such a ball point pen.
- Always use a manufacturer–approved label and marker.

A1.7 Delivering CD Text

To insure a smooth replication process, we recommend that you generate a PQ List and include a printed copy with your replication master, whether your job includes CD Text or not. Use the PQ List button in the Windows > Mark Info > PQ Delivery tab. This file is an essential check list for your replicator, so their quality control can be maintained.

In addition, a PQ List is a perfect way to ensure that CD Text information is delivered to replication. With version 3.0 PreMaster CD writes CD Text metadata in DDP file sets.

The PQ listing uses the information you enter in the Mark Info dialog to generate a "plain text" or ASCII text file so, before you create a PQ list and a CD-R with CD Text, double check your information in Mark Info. Remember to avoid metacharacters in CD Text strings, like #, / and $, just as you would if you were naming computer files.

Click on the PQ List button to save and open a PreMaster CD PQ Log. Then, review, edit and append any information missing or in need of expansion. Fill in the Client name, Date, Work Order (WO) number, and the UPC/EAN. Edit the Project name and disc Title to make sure it's correct. Add the disc Artist under disc Title. Check each track name and make any corrections necessary. If your job is a compilation, be sure to add Track Artist to your listing, preferably after the individual track names.

Finally, be sure to indicate, on both the printed PreMaster CD PQ Log that you want CD Text to appear on the final, replicated Compact Disc. The PQ Log provides the replicator a way to verify the include CDText. Include your contact information right on the PreMaster CD PQ Log in case any questions arise.

Appendix 2 ..... Keyboard Shortcuts

Windows Shortcuts

Meters / Desk	command + 1
Console Log	command + 4
Mark Info	command + M
Preferences	command + comma (,)

File & Project Shortcuts

New Project	command + N
Open Project	command + O
Save Project	command + S
Close Window	command + W
Open DDP image	option + command + O
Open Sound File	shift + command + O
Quit (application)	command + Q

Playback Shortcuts

Stop/Start Playback from Edit Point	spacebar
Play Selection	command + spacebar
Play from Playhead	option + spacebar
Repeat Play	command + option + spacebar
Play to In Point	F5
Play from In Point	F6
Play to Out Point	F7
Play from Out Point	F8
Play between In & Out Points	command + control + F5
Hide Playhead When Stopped	option + P

Editing Shortcuts

Undo last Edit	command + Z
Redo last Undo	command + shift + Z
Select All	command + A
Deselect All	command + D

Cut	command + X
Copy	command + C
Paste (Replace)	command + V
Paste (Insert)	command + option + V
Paste (Constrained)	command + shift + V
Paste (Overlay)	option + V
Select All	command + A
Deselect All	command + D
Delete Selection	delete (backspace)
Clear Selection	option + delete (backspace)
Create Crossfade	control + G
Create Crossfade from In/In & Out Point	control + option + G
Set In Point	left bracket ([)
Set Out Point	right bracket (])
Set In & Out Points	control + option + left bracket ([)
Clear In Point	control + left bracket ([)
Clear Out Point	control + right bracket (])
Clear In & Out Points	control + backslash (\)
Nudge In Point Right	control + command + left bracket ([)
Nudge Out Point Right	control + command + right bracket (])
Nudge In Point Left	option + command + left bracket ([)
Nudge Out Point Left	option + command + right bracket (])
Nudge Selected Segment(s)	plus or minus (+ or -, numeric keypad)
Move In Point	option + left bracket ([)
Move Out Point	option + right bracket (])
Move In Point to Out Point	option + backslash(\)
Find & Set Points	command + backslash (\)
Set SRP	command + semicolon (;)
Set SRP with Text	F12
Clear Selected SRPs	control + semicolon (;)
Drop Edit Point	backslash (\)
Edit Point to Playhead	option + command + backslash (\)
Move Edit Point to Next PQ Mark	shift + F6
Move Edit Point to Previous PQ Mark	shift + command + F6
Move Edit Point to Next Segment Edit Point	shift + F5
Move Edit Point to Previous Segment Edit Point	shift + command + F5
Move Edit Point To In/Out Point	shift + F7
Move Edit Point to Next SRP	shift + F10

Move Edit Point to Previous SRP	shift + command + F10
Select Start to Edit Point	option + hyphen (-)
Select Edit Point to End	option + equals (=)
Select Segments to End	shift + command + right arrow
Select Segments To Start	shift + command + left arrow
Select between SRPs	double click at bottom of waveform display
Change Crossfade duration	shift + click/drag with Crossfade Tool

Viewing Shortcuts

Show Text View	option + T
Show Gain Overlay	option + G
Refresh	command + R
Standard Track Size	option + 5
Large Track Size	option + 6
Move Forward	right arrow
Move Forward/Backward	command + option + control + click/drag on waveform
Move Backward	left arrow
Zoom In	down arrow
Zoom Out	up arrow
Zoom In Around In Point	command + arrow left
Zoom Around Out Point	command + arrow right
Zoom Around Edit Point	command + arrow down
Zoom Out Around Edit Point	command + arrow up
Zoom In Around Playhead	option + arrow down
Zoom Out Around Playhead	option + arrow up
Zoom to Previous	command + P
Zoom to Next	command + option + P
Zoom to Selection	command + G
Zoom to Selection	command + option + click/drag on waveform
Zoom to Entire EDL	command + E
Zoom to (Time Line) Selection	command + click/drag right on time line
Zoom to Waveform selection	command + option + click/drag on waveform

CD Prep

Create Track Start Mark	F9
Create Track End Mark	F10
Delete Mark(s)	command + F12

Edited Black to Marks	command + option + F9
Edited Black to Start Marks	command + F9
Mark Info (window)	command + M

System

Preferences	command + comma
Select Nudge Size A	control + 1
Select Nudge Size B	control + 2
Select Nudge Size C	control + 3

Appendix 3 .....Contextual Menus

Control–Click...

In the Waveform —

With a selection active, or on the selection's Drag Bar:

Create Segment = Create Segment from Selection command

Zoom To Selection = Zoom To Selection command

List of available AU plug–ins = select plug–in to Event alot during selection time-period

With a segment selected, on a segment Title Bar or on a segment's Drag Bar:

Help — not implemented

Move Segments = Move Segment command

Segment Gain — opens the Segment Gain window

Reverse Polarity = Reverse Polarity command

Set Polarity — not implemented

Reset Polarity — not implemented

Build Waveforms = Build Waveform command

Reveal Selected Segment Files in Finder — shows the location of the selected segment with Mac OS browser

Show BWF meta-data (for BWF files only) - shows the BWF metadata for files recorded in Broadcast WAV file format

List of available AU plug–ins — select plug–in for time region selection occupied by segment

With Gain Overlay on —

On a Gain Node:

Lock Gain Node — locks the selected Gain Node(s)

Unlock Gain Node — unlocks the selected Gain Node(s)

Delete Nodes From Selection — deletes all nodes within the current selection

Lock Nodes from Selection — locks all nodes within the current selection

Unlock Nodes from Selection — unlocks all nodes within the current selection

Lock All Nodes in Track — locks all nodes in the Panel

Unlock All Nodes in Track — unlocks all nodes in the Panel

In the Track Bar —

Hovering over a PQ Start, End or Index Mark:

PQ Mark Locked — locks the selected PQ Mark

PQ Mark Unlocked — unlocks the selected PQ Mark

Lock marks From Selection — locks all PQ Marks in a selected region or segment(s)

Unlock marks From Selection — unlocks all PQ Marks in a selected region or segment(s)

Lock All Marks — locks all PQ marks in a track

Unlock All Marks — unlocks all PQ marks in a track

Set Emphasis — sets emphasis flag for the selected PQ Mark

Reset Emphasis flag — resets emphasis flag for the selected PQ mark

Delete Mark — deletes selected PQ mark

In the waveform display —

Hovering over a fade-in, fade-out or crossfade with FadeTool enabled:

Linear — set the fade curve to be 6dB down in the center of the fade

Root-linear — set the fade curve to be 6dB down in the center of the fade

Cosine — default 3 dB down in the center

Root Cosine — default 6 dB down in the center

Exponential — provides very rapid reduction in gain across the fade

Set Fade to Fade In/Out/Crossfade — change the fade type to one of the default fade types

Set FadeTo Selection — Sets the fade duration to match the current selection

Set FadeTo Default Fade In/Out/Crossfade — changes all fade parameters to the Default Fade's characteristics

On a PQ mark —

Hovering over a mark:

Move Edit PointTo Mark — Moves Edit Point to this mark

Lock Mark — Locks this mark

UnLock Mark — Unlocks this mark

Lock Marks From Selection — Locks these marks

UnLock Marks From Selection — Unlocks these marks

Lock All Marks — Locks all marks

UnLock All Marks — Unlocks all marks

Set Emphasis — Sets the emphasis bit for this mark

Reset Emphasis — Disables the emphasis bit for this mark

Delete Mark — Deletes this mark

Appendix 4 .....Additional Resources

Below is a list of internet resources on subjects relating to PreMaster CD and it's intended field of use…

A4.1 Professional Organizations

International Federation of Phonographic Industries — assigns ISR codes (ISRC).

http://www.ifpi.org/

The P&E wing of the National Academy of Recording Arts & Sciences provides recommended practices for production and interchange formats.

http://www.grammy.com/Recording_Academy/Producers_and_Engineers/

The Audio Engineering Society promotes many industry standards in the field of professional audio, as well as providing numerous recommended practices for applications and interchange formats.

http://www.aes.org/

A4.2 Commercial Businesses

Doug Carson Associates, creators of the DDP protocol and related industry standards.

http://www.dcainc.com/

Philips Intellectual Property & Standards is responsible for the maintenance of the Red and Scarlet Books, along with related standards.

http://www.licensing.philips.com/

Note that, for the PDF version of this Index, only the page numbers, *not the preceding descriptive subject text*, are hyperlinked.

Index

Symbols

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

R

S

T

U

V

W

Z

Created by Seneschal <www.seneschal.net> & Sonic Studio, LLC <www.sonicstudio.com>, using PreMaster CD 3, Mac OS, Adobe InDesign and the Univers family of typefaces. From all of us at Sonic Studio, we thank you for your support and encouragement. We would also like to thank all our dedicated testers for their assistance in bringing this product to your studio… *Thank you very much!*

Comments, corrections and suggestions regarding this manual are always welcome. Please contact us at <support@sonicstudio.com>. 080820v3r3